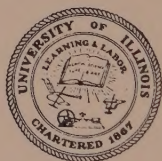




CANADA YEAR BOOK

1960

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Summer brings an accent of colour and pageantry to Parliament Hill in the National Capital. The stirring spectacle of the Changing of the Guard, performed each morning from July to mid-September 1960 by No. 7 Company, 2nd Battalion of the Canadian Guards, was viewed by upwards of half a million persons.

CANADA YEAR BOOK

1960

OFFICIAL STATISTICAL ANNUAL OF THE
RESOURCES, HISTORY, INSTITUTIONS AND SOCIAL
AND ECONOMIC CONDITIONS OF CANADA

Published by Authority of

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PREFACE

The 1960 edition of the Canada Year Book continues a series of annual publications giving official statistical and other information on almost every measurable phase of Canada's development. As the economy of the country has expanded, the Dominion Bureau of Statistics has endeavoured to present the story of this development, summarizing a great mass of detailed statistical information concisely within the covers of one volume and supplementing it with data from other Departments of the Federal Government and from the provinces.

Special feature articles are presented in each edition of the Year Book. Those in the current issue include: "The Geological Survey of Canada" (pp. 13-19); "Climatic Tables"—supplementing the study on The Climate of Canada appearing in the 1959 edition—(pp. 31-77); "Hospital Services and Hospital Insurance in Canada" (pp. 281-290); "The Revolution in Canadian Agriculture" (pp. 434-439); "Canada's Commercial Fishery Resources and Their Conservation" (pp. 625-630); "The St. Lawrence Seaway in Operation" (pp. 851-860); and "The Board of Grain Commissioners" and "The Canadian Wheat Board and Its Role in Grain Marketing" (pp. 957-960).

Extensive revisions have been made in the textual and statistical material of the various chapters, particularly with regard to the machinery of government, the native peoples of Canada, public health and welfare, scientific, medical and industrial research, power generation and utilization, mineral production, manufacturing, transportation and communications, the domestic marketing of commodities, foreign trade, national income and expenditure and Canada's investment position. In addition, new features have been introduced covering such subjects as the national parole system, space research, and controls over the pricing and marketing of farm products other than grain. The Introduction (pp. xi-xv) describes briefly the state of the economy during the first half of 1960.

The concluding chapter, entitled "Sources of Official Information and Miscellaneous Data", presents reference material listing government information services, special material published in earlier Year Books, federal legislation of the 1960 session of Parliament, a Canadian chronology of events, a register of official appointments, and a statistical summary of the progress of Canada since 1871. In the Appendix certain material on Government (Chapter II) is brought up to the date of going to press, including recent election results in the provinces and changes in the Eighteenth Ministry of Canada.

Enclosed in the pocket on the inside back cover of the volume is a detailed political map.

The present volume has been produced in the Canada Year Book Section of the Information Services Division by Miss M. Pink, Assistant Editor of the Year Book and Chief of the Section, and the Year Book staff under the editorship and direction of Dr. C. C. Lingard, Director of the Division. Charts, graphs and maps have been prepared for publication by Miss P. Beland, the Drafting Unit of the Bureau, and the Surveys and Mapping Branch of the Department of Mines and Technical Surveys.

The co-operation of numerous officials of the various Departments of the Federal and Provincial Governments and of this Bureau in the preparation of material for the Year Book is gratefully acknowledged. Credit by means of footnotes is given where possible either to the persons or to the branches of the public service concerned.

Walter E. Duffett.

DOMINION STATISTICIAN

DOMINION BUREAU OF STATISTICS,
Ottawa, October 15, 1960.

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WEIGHTS AND MEASURES AND OTHER INTERPRETATIVE DATA

In Canada as a rule the Imperial system of weights and measures is followed. An exception, however, is the ton where, unless otherwise stated, the short ton of 2,000 lb. is meant. Billion where used represents 1,000 million.

The following table shows the weights and measures used in Canada in connection with the principal field crops and for wheat flour and fruits:—

	<i>Pounds per Bushel</i>		<i>Pounds</i>
Grains—		Fruits (standard conversions)—	
Wheat.....	60	Apples, per barrel.....	135
Oats.....	34	Apples, per box.....	43
Barley.....	48	Pears, per bushel.....	50
Rye.....	56	Plums " ".....	50
Buckwheat.....	48	Cherries " ".....	50
Flaxseed.....	56	Peaches " ".....	50
Corn.....	56	Grapes " ".....	50
Mixed grains.....	50	Pears, per box.....	42
All others.....	60	Strawberries, per quart.....	1.25
		Raspberries " ".....	1.25
		Loganberries " ".....	1.25

Wheat Flour—

1 barrel equals 196 pounds; approximately
4.5 bushels of wheat are used in the production
of a barrel of flour.

Relative Weights and Measures, Imperial and United States

The following list of coefficients may be used to translate amounts expressed in one unit to the other. It must be borne in mind that where the list below refers to Imperial pint, quart and gallon, their equivalent in ounces is also in Imperial measure; likewise United States designations for these quantities are shown in the U.S. equivalent in ounces. The Imperial (or British) fluid ounce and the U.S. fluid ounce are different measures. One Imperial fluid ounce equals 0.96 United States fluid ounce and one Imperial gallon equals 1.2 United States gallon.

1 Imperial pint=20 fluid ounces.	1 Imperial proof gallon=1.36 United States proof gallon.
1 United States pint=16 fluid ounces.	1 short ton=2,000 pounds.
1 Imperial quart=40 fluid ounces.	1 long ton=2,240 pounds.
1 United States quart=32 fluid ounces.	1 barrel crude petroleum=35 Imperial gallons.
1 Imperial gallon=160 fluid ounces.	1 ounce avoirdupois=0.91146 ounce troy (oz. t.)
1 United States gallon=128 fluid ounces.	

Fiscal Years of Federal and Provincial Governments

The fiscal year of the Federal Government and of each of the ten Provincial Governments ends on March 31.

Throughout the Year Book, fiscal year figures are indicated in the text and headings of tables; otherwise, figures are for calendar years.

INTRODUCTION

THE CANADIAN ECONOMY IN THE FIRST HALF OF 1960

The strength of expansionary forces in Canada waned in the first half of 1960, following two years of rising economic activity. The pace of advance slackened in the first quarter and the second quarter brought a small decline in the gross national product, when seasonal factors are taken into account. Nevertheless aggregative measures of activity were above the like period of 1959. Thus, the gross national product was running at a seasonally adjusted annual rate of \$35,336,000,000, which was more than 3 p.c. higher than a year earlier; about half the increase represented higher prices. At the same time employment was up about 2 p.c. but the gain failed to match the growth in the labour force, leaving an increased rate of unemployment.

The easing in activity during the first half of the year was related to a sharp reduction in house-building and to a declining rate of accumulation of stocks. Investment in plant and equipment remained fairly high but failed to exert the expansionary influence that had been anticipated early in the year. Consumer spending continued to rise but at a significantly lower rate than in the same period a year earlier; the contrast between the two periods in the consumer market for durables was particularly evident in purchases of automobiles.

Foreign demand for Canadian export products continued to increase and the vigorous expansion in sales to the United Kingdom and countries of the European Common Market was a notable development of the first half of 1960. At the same time, imports recorded a relatively small advance, reflecting the easing in demand in certain areas in Canada. Thus, the deficit on current international account was considerably lower than a year earlier.

This changing pattern of demand was mirrored in the flow of income. Business income, both corporate and unincorporated (non-farm), was adversely affected and rates of increase in personal disposable income were retarded. Government revenues were notably higher, thereby substantially reducing the deficit.

The following paragraphs describe in more detail the changes in the components of demand and in income flows and the movements in production, employment and prices associated therewith in the first half of 1960. Where available, additional information is presented on trends emerging in the second half of the year.

THE COMPONENTS OF DEMAND

While the consumer sector gave a forward impetus to the economy during the first half of 1960, its expansionary influence was not so strong as it had been in most of the years of the postwar period. Expenditure on consumer goods and services was at a seasonally adjusted annual rate of \$22,864,000,000, an increase of 4 p.c. over the same period of 1959, which compares with a gain of 6 p.c. in the first six months' comparison a year earlier. In real terms, the gain in 1960 was somewhat below the average for postwar years. A somewhat smaller-than-average rise in real disposable income was associated with this development in consumer spending. The rise in spending in the first half of 1960 considerably exceeded the gain in disposable income, thus reducing the rate of personal saving significantly below the relatively high level that had prevailed in the same period of 1959. At the same time, consumer credit outstanding at mid-1960 was notably higher than a year earlier.

An easing in demand for durable goods was an outstanding feature of consumer markets in the first half of 1960. Purchases of all major categories of durable goods were

somewhat lower than they had been in the same period of 1959 when the market for durables had been notably buoyant. The contrast was especially marked in sales of new and used cars which rose 14 p.c. in the first half of 1959 and fell more than 2 p.c. in the first half of 1960; a clear-cut contrast was also evident in the sales of radios and appliances which rose 7 p.c. in the first comparison and fell 3 p.c. in the second. It seems likely that the drop in sales of household durables reflected in part the steep decline in housing activity from the extremely high rates characteristic of 1958 and 1959. Spending on durables as a group was down about 1.5 p.c.

The increase in spending was concentrated in the non-durable and service categories, with gains of more than 4 p.c. in the former and 5.5 p.c. in the latter. The increase in spending on non-durables matched fairly closely that of the comparable period of the previous year. Consumer spending on services continued to reflect a significant element of price increase.

Turning to consider housing, which is closely related to the consumer sector, outlays in the first half of 1960 were running at an annual rate of \$1,552,000,000, more than 11 p.c. lower than in the like period of 1959. This decline was related in part to the stringency in mortgage markets, particularly as it affected lending under the National Housing Act. Only 10,943 dwellings were financed under the Act in the first half of 1960 compared with 28,968 dwellings in the same period a year earlier. The total number of dwellings started (at a seasonally adjusted annual rate) was about 100,000 compared with about 144,000 a year earlier and the number of dwellings completed was 140,000 compared with 150,000. In 1958, the record year for housing, dwellings started numbered 165,000.

During the course of the year several steps were taken to stimulate activity in housing. In April funds were made available to the Central Mortgage and Housing Corporation for direct loans and applications were being accepted for the first time since the end of October 1959. In July it was announced that direct loans would be made available to merchant-builders for a limited period of time and income limits for direct loans to individual owners were raised, both measures to become effective at the beginning of September. In October further measures for direct lending were announced and terms and conditions of Central Mortgage and Housing Corporation lending were liberalized.

Business expenditures for plant and equipment in the first half of 1960, at a seasonally adjusted rate of \$5,106,000,000, were about the same as in the same period a year earlier, but somewhat lower than the annual rate for 1959. Evidence of some easing in activity in capital investment during the course of the first six months is to be found in the trend of both imports and domestic shipments of machinery and equipment as well as in the movements in the indicators of non-residential construction. Thus the experience of the first half of 1960 did not confirm the expectations of higher outlays for plant and equipment which had been expressed by business men in the forecast of investment intentions.

Investment in stocks in the first half of 1960 continued to add to the demands on current production. Accumulation of non-farm business inventories amounted to about \$440,000,000 (seasonally adjusted at annual rates) compared with an annual rate of \$355,000,000 in 1959. However, the rate of accumulation fell sharply between the first and second quarters. Continued stock-building in manufacturing industries, in the face of the declining trend in new orders which had set in in the spring, raised the ratio of stocks to shipments at the end of the second quarter to the highest level since early 1958.

The vigorous expansion in economic activity in Western Europe and the sustained level of prosperity in the United States in the first half of 1960 provided a generally favourable climate for Canadian exports. Exports of goods and services were at an annual rate of \$6,952,000,000, about 7 p.c. higher than in the like period of 1959. An 8-p.c. gain in commodity exports reflected conspicuously large gains in sales of aluminum, nickel and copper and substantial losses in sales of farm implements and machinery, wheat,

fishery products and uranium ores and concentrates. The expansion in sales to the United Kingdom and to the countries of the European Common Market was especially large, amounting to 21 p.c. and 28 p.c., respectively; sales to the United States showed only a modest increase.

Imports of goods and services in the first half of 1960 were running at a seasonally adjusted annual rate of \$8,202,000,000, about 4 p.c. higher than in the same period of 1959. The continued growth of payments in service transactions accounted for part of this increase. Commodity imports were higher by 3 p.c.; changes in the main commodity groups were for the most part small and largely offsetting. The slight increase in imports occurred in the first quarter.

The differing rates of increase in exports and imports of goods and services in the first half of 1960 substantially narrowed the deficit on current international account; payments exceeded receipts by \$1,250,000,000 (at a seasonally adjusted annual rate) compared with \$1,386,000,000 in the first half of 1959; the deficit on the merchandise items was \$222,000,000, only half as large as a year earlier.

Going into the second half of the year, merchandise exports showed increased strength and in the eight-month comparison between 1960 and 1959, recording a gain of 9.5 p.c. Merchandise imports also rose in the same comparison but at a much lower rate. Exports exceeded imports in the months of July and August and in the eight-month comparison the import balance was substantially reduced.

INCOME FLOWS

The changes in demand outlined above were reflected in the composition and direction of income flows. National income in the first half of 1960 was only about 2.5 p.c. higher than in the first half of 1959, compared with a gain of 7.5 p.c. in the preceding year-over-year comparison. The flow of income to the business sector was adversely affected, particularly in the second quarter, by the slight easing in industrial production. Thus corporate profits in the first half of the year were moderately lower than a year earlier. Income of unincorporated business (non-farm) was also lower, largely as a result of the drop in activity in the construction industry. The 11-p.c. decline in corporate profits (seasonally adjusted) in the second quarter was one of the sharpest on record and the first set-back in this area since the recovery began in 1958, following two years of steady decline.

Labour income in the first half of 1960 was higher than a year earlier by 4 p.c., with gains in almost all major industries; construction was a significant exception. The largest gain was in forestry, reflecting the distinct improvement in employment in the industry. The service industries continued to record relatively large gains and in trade the rise was also above average. In manufacturing and mining the rise in labour income was comparatively small; employment in mining was off moderately and hours of work in manufacturing were a little below the level of a year earlier.

Personal income in the first half of the year was higher by about 3 p.c. However, direct personal tax collections also rose, leaving income at the disposal of consumers higher by less than 2 p.c. Both personal income and disposable income fell slightly, on a seasonally adjusted basis, in the second quarter, and second quarter disposable income was at virtually the same level as a year earlier.

Despite some unfavourable developments in the flow of income to the business and personal sectors, government revenues were buoyant. Taxes collected by and accruing to government in the first half of 1960 were 10 p.c. higher than in the same period of 1959. At the same time, government expenditures rose much less, so that a large part of the increase in revenue was available to reduce the deficit, which fell from a seasonally adjusted annual rate of about \$800,000,000 in the first half of 1959 to one of about \$440,000,000 in the first half of 1960.

PRODUCTION, EMPLOYMENT AND PRICES

The pattern of production by industry in the first half of 1960 differed considerably from that evident a year earlier. Both the goods-producing industries and the service-producing industries recorded gains in real output of about 2 p.c. but experience varied widely within these broad aggregates. Among the goods-producing industries, output was substantially lower in construction, largely as a consequence of the steep decline in housing, and agricultural output was somewhat lower. The gains in the other goods-producing industries ranged from 3 p.c. in manufacturing to 13 p.c. in public utilities. Some increase in production occurred in all the service-producing industries.

The 5-p.c. gain in mining production reflected fairly sharply opposed movements within the total. Production of fuels rose substantially as a result of the increased output of natural gas and petroleum; quarrying production was down even more sharply in a situation of declining demand for construction materials. Production in the metals and non-metallic groups was moderately higher.

A decided improvement in the market for pulpwood accounted for an 8-p.c. increase in output in the forestry industry.

The 3-p.c. increase in manufacturing production was the outcome of mixed movements in individual manufacturing industries. The major part of the gain was in non-durables; output was higher in most non-durable manufacturing industries, with gains ranging from 1 p.c. and 2 p.c. in foods and textiles to 15 p.c. in chemicals. On the other hand, production declined in the clothing industry and dropped sharply in the less important rubber and leather products industries. Among the durable goods industries, production fell in wood products and in non-metallic mineral products; gains in the other durable goods industries ranged from 1 p.c. in transportation equipment to 10 p.c. in non-ferrous metal products.

The 13-p.c. increase in output of public utilities reflected a further substantial increase in output of electric power and a major gain in the distribution of natural gas.

The lower volume of retail sales in a number of lines, including lumber and building materials, motor vehicles (new and used), hardware, furniture, appliance and radio stores, as well as some others, was only partially offset by gains in sales of food stores and variety stores. However, activity was higher in wholesaling and output for trade as a whole was a little above that of the first half of 1959.

The index of industrial production, which covers mining, manufacturing, and gas and electric utilities, reached its peak of 173.5 (1949 = 100) in January (seasonally adjusted) and tended to decline a little thereafter, standing at 164.1 in July. The declining tendency was most pronounced in the durable segment of manufacturing but was also apparent in mining.

Comparing the first six months of 1960 with the same period a year earlier, employment was higher by about 2 p.c. However, the increase in opportunities of employment did not match the growth in the labour force and unemployment as a percentage of the labour force was 6.6 p.c. compared with 6.1 p.c. in the first half of 1959. The trend of employment in August and September showed somewhat more than seasonal strength. One feature of the labour market in 1960 was the continuing firm demand for labour in the trade and service industries, and hence expanding opportunities for women workers. Thus the year-over-year increase in the number of women employed was substantial, and the increase in the number of employed men was very small.

Prices were somewhat higher in the first half of 1960 than a year earlier. The element of price increase in the gross national expenditure was less than 2 p.c.; all components showed at least some increase in prices. However, much of the advance to a higher level had occurred before the beginning of the year. During the first eight months of 1960, both

the consumer price index and the index of wholesale prices showed only small changes; the same applies to the major components of both indexes. Export prices likewise remained stable, while import prices showed a slight increase in the period.

As this volume went to press, no comprehensive measures of the economy's performance in the third quarter of 1960 were as yet available. However, the indicators pointed to a continuation of the conflicting trends present in the first half of the year, with perhaps more elements of strength than were apparent in the second quarter. Support to the level of the domestic economy continued to come from the external sector as exports maintained their substantial year-over-year gains and imports fell off moderately. In a situation of easier conditions in mortgage markets, housing began to show signs of recovery when seasonal factors were taken into account. At the same time, preliminary indications were that investment in business inventories was slackening. Some improvement was indicated in retail sales and small gains were also reflected in the trends of production and employment.

While there was uncertainty in many quarters about the strength of housing demand, the evidence available showed a distinct pick-up in housing activity in the autumn months. When seasonal factors were taken into account, housing starts (in municipalities of 5,000 or more population) in October were running at an annual rate of 89,000 units, 20 p.c. higher than in the third quarter and 33 p.c. higher than in the low second quarter. The lending activity of the life, loan and trust companies under the National Housing Act rose during the course of the year and in September these lenders approved loans for over five times as many dwelling units as in the preceding September when their lending activity was exceptionally low; applications in the hands of these companies suggested further expansion. On the other hand, lending activity of the chartered banks and the Central Mortgage and Housing Corporation remained much below the levels of 1959; the number of loan approvals in September was only about half as large as a year earlier.

Nine-month data on commodity exports showed a gain over the comparable period of 1959 of 8 p.c., all of which was in exports to countries other than the United States. At the same time commodity imports were only fractionally higher, resulting in a deficit on merchandise account of about \$121,000,000 compared with \$415,000,000 in the same period of 1959.

Preliminary statistics for the month of August indicated a pick-up in manufacturers' shipments (seasonally adjusted). In this situation, the building up of manufacturers' inventories, which had been in progress since late 1958, appeared to have been arrested if not reversed. The index of industrial production rose slightly in August to reach 165.4 (seasonally adjusted), reflecting a rise in the output of durable manufactures, following the sharp drop in the previous month, and a further expansion in the output of the utilities. Non-durable manufacturing output remained virtually stable and mining production continued to decline. Most of the durable groups showed some increase.

The value of retail sales rose a little in September, on a seasonally adjusted basis. Some of the gain was in sales by motor vehicle dealers but department stores and the furniture, radio and appliance group recorded somewhat lower sales.

Evidence of some improvement in economic activity was present in employment statistics for October, the decline in employment between September and October being less than seasonal. At the same time, the labour force expanded more rapidly than it had for the two preceding years, with the result that the number unemployed rose more than seasonally.

SYMBOLS

The interpretation of the symbols used in the tables throughout this publication is as follows:—

.. figures not available.

... figures not appropriate or not applicable.

— nil or zero.

- - amount too small to be expressed or where "a trace" is meant.

ᵀ preliminary figures.

ᵂ revised figures.

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NOTE.—The interpretation of the symbols used in the tables throughout the Year Book will be found on the facing page.

PART I.—GEOGRAPHY*

Canada occupies the northern half of the North American Continent with the exception of Alaska and Greenland, extending in longitude from Cape Spear, Newfoundland, at 52° 37' W, to Mount St. Elias, Yukon Territory, at 141° W, a distance of 88° 23'. In latitude it stretches from Middle Island in Lake Erie, at 41° 41' N, to the North Pole. The northernmost point of land is Cape Columbia on Ellesmere Island, at 83° 07' N. Canada is thus a western and a northern country, a fact of increasing strategic significance.

In shape, Canada resembles a distorted parallelogram with its four corners making important salients. In the north the salient formed by the Arctic Archipelago, which penetrates deep into the Arctic basin, guards the northern approaches to the Continent from Europe and Asia and makes Canada neighbour to the Union of Soviet Socialist Republics. In the south the salient of peninsular Ontario thrusts far into the heart of the United States. In the east the salient of Labrador and the Island of Newfoundland commands the shortest crossings of the North Atlantic Ocean and links Canada geographically with the United Kingdom and France. In the west the broad arc of land between Vancouver in southern British Columbia and Whitehorse in Yukon Territory provides the shortest crossings of the North Pacific Ocean between continental North America and the Far East. Canada thus lies at the crossroads of contact with the principal powers and some of the most populous areas of the world.

* Revised by the Geographical Branch, Department of Mines and Technical Surveys, Ottawa.

In size, Canada is the largest country in the Western Hemisphere and the second largest country in the world. Its area of 3,851,809 sq. miles may be compared with that of the Union of Soviet Socialist Republics, 8,649,821 sq. miles,* the United States of America (including Alaska and Hawaii), 3,615,213 sq. miles,* and Brazil, 3,287,204 sq. miles.* It is more than forty times the size of the United Kingdom and eighteen times that of France. The immense size of the country, while encompassing many resources and seeming to afford much scope for settlement, imposes its own burdens and limitations, particularly because much of the land is mountainous and rocky or is under an Arctic climate. The developed portion is probably not more than one-third of the total; the occupied farm land is less than 8 p.c. and the currently accessible productive forested land 19 p.c. of the total. The population of Canada, estimated at 17,442,000 on June 1, 1959, may be compared with 174,809,000† for the United States (including Alaska and Hawaii) (1958) and with 62,725,000† for Brazil (1958).

1.—Approximate Land and Freshwater Areas, by Province or Territory

NOTE.—A classification of land areas as agricultural, forested, etc., is given at p. 20.

Province or Territory	Land	Freshwater	Total	Percentage of Total Area
	sq. miles	sq. miles	sq. miles	
Newfoundland.....	143,045	13,140	156,185	4.1
Island of Newfoundland.....	41,164	2,195	43,359	1.1
Labrador.....	101,881	10,945	112,826	3.0
Prince Edward Island.....	2,184	—	2,184	0.1
Nova Scotia.....	20,402	1,023	21,425	0.6
New Brunswick.....	27,835	519	28,354	0.7
Quebec.....	523,860	71,000	594,860	15.4
Ontario.....	344,092	68,490	412,582	10.7
Manitoba.....	211,775	39,225	251,000	6.5
Saskatchewan.....	220,182	31,518	251,700	6.5
Alberta.....	248,800	6,485	255,285	6.6
British Columbia.....	359,279	6,976	366,255	9.5
Yukon Territory.....	205,346	1,730	207,076	5.4
Northwest Territories.....	1,253,438	51,465	1,304,903	33.9
Franklin.....	541,753	7,500	549,253	14.3
Keewatin.....	218,460	9,700	228,160	5.9
Mackenzie.....	493,225	34,265	527,490	13.7
Canada.....	3,560,238	291,571	3,851,809	100.0

Section 1.—Physical Geography

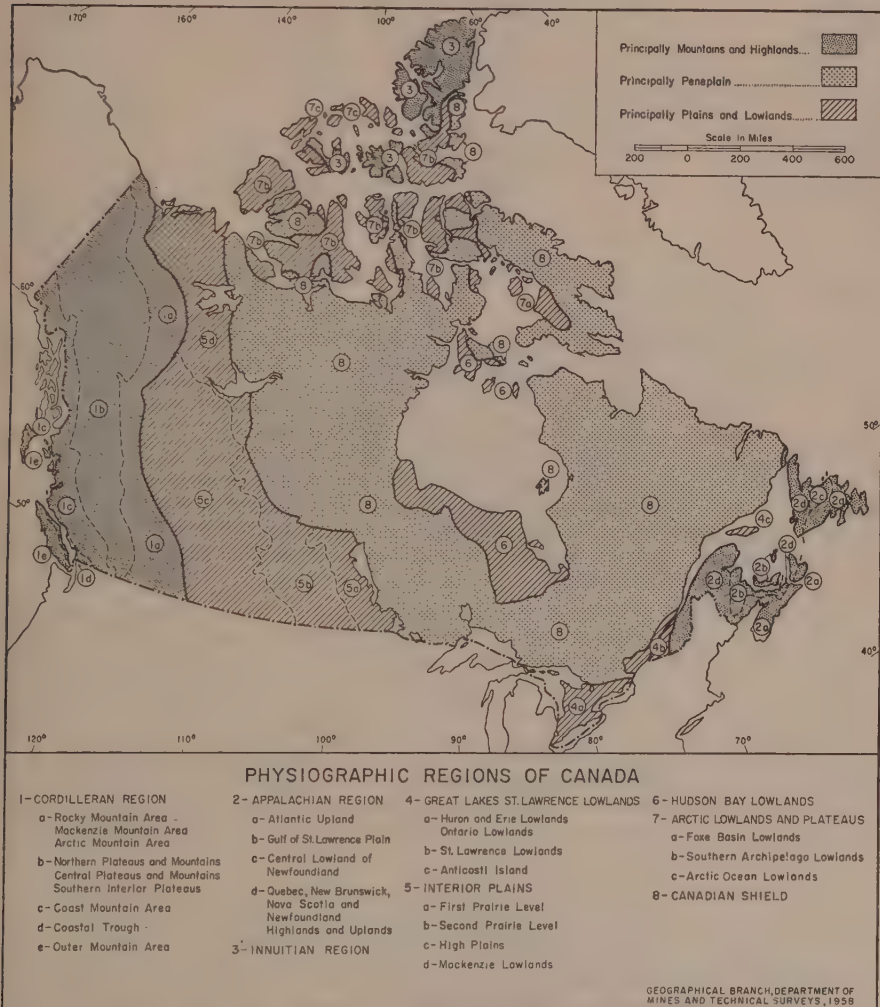
Subsection 1.—Physiographic Regions

Canada includes each of the major characteristic structures of the North American Continent with the exception of the Atlantic coastal plain. Structure tends to dominate relief to a remarkable degree even though its effects have been modified by glacial and river erosion or deposition. Consequently, structural regions have become the main physiographic divisions.

* United Nations Statistical Yearbook, 1958.

† United Nations Population and Vital Statistics Report, Oct. 1, 1959.

Eight physiographic regions dominate the country: (1) the Cordilleran Region; (2) the Appalachian Region; (3) the Innuitian Region; (4) the Great Lakes St. Lawrence Lowlands; (5) the Interior Plains; (6) the Hudson Bay Lowlands; (7) the Arctic Lowlands and Plateaus (under slightly different nomenclature) are given in the 1957-58 Year Book at pp. 3-9. The physical structure of the country is also described in its relation to climatic phenomena in a special article on The Climate of Canada which appears in the 1959 Year Book at pp. 23-51.



Subsection 2.—Inland Waters

The inland waters of Canada (not including saltwater areas that are a part of Canada) are extensive, constituting over 7.6 p.c. of the total area of the country. They are best studied by segregating the main drainage basins as shown in Table 2.

2.—Drainage Basins

Drainage Basin and Province or Territory	Area Drained ¹	Drainage Basin and Province or Territory	Area Drained ¹
	sq. miles		sq. miles
Atlantic Basin	695,370	Arctic Basin (mainland)	944,280
Ontario.....	116,000	Saskatchewan.....	46,650
Quebec.....	372,780	Alberta.....	158,110
Newfoundland.....	155,360	British Columbia.....	105,020
New Brunswick.....	27,980	Yukon.....	53,970
Nova Scotia.....	21,070	Northwest Territories.....	580,530
Prince Edward Island.....	2,180		
Hudson Bay Basin	1,160,420	Pacific Basin	387,210
Quebec.....	199,230	British Columbia.....	251,990
Ontario.....	259,810	Yukon.....	135,220
Manitoba.....	243,780		
Saskatchewan.....	189,620	Gulf of Mexico Basin	8,600
Alberta.....	86,530	Alberta.....	2,540
Northwest Territories.....	181,450	Saskatchewan.....	6,060

¹ Areas are approximate and are exclusive of those portions of the basins of all rivers that lie in United States territory, and of areas of interior drainage.

During the early period of exploration and development the waterways of Canada were the sole means of access to and travel in the interior. This function is still of importance to much of the country, particularly in the north where most traffic moves by water or by air. In the settled areas, however, the construction of roads and railways has reduced the role of the waterways as transportation routes but they have assumed other functions. Some, particularly in the Canadian Shield area and the Cordilleran region, have been harnessed for the production of electric power. Others, mainly in southern Alberta and Saskatchewan, have been dammed to provide water for irrigation purposes. In Eastern Canada many of the rivers have been controlled in an over-all program of flood prevention and conservation of renewable resources or to provide dependable supplies of water for industrial and domestic purposes.

In Eastern Canada, the Great Lakes and St. Lawrence drainage system dominates all others and forms an unequalled navigable inland waterway through an extensive region rich in natural and industrial resources. From Duluth, Minn., at the head of Lake Superior to Belle Isle at the entrance to the Gulf of St. Lawrence the distance is 2,280 miles. The St. Lawrence waterway and its tributaries, most of which have lakes available for reservoiring, have very large developed and potential power resources. In 1959 an event of great international importance took place with the opening of the St. Lawrence deep waterway (Seaway), providing a navigation channel with a minimum depth of 27 feet from Montreal to the Great Lakes. Navigation of ocean-going ships is now possible into the heart of the Continent, and it is anticipated that the whole Great Lakes area will undergo many changes as a result.

The greater part of Canada drains into Hudson Bay and the Arctic Ocean; the Nelson River drainage is exceptional in running *through* the most arable and the most settled part of Western Canada but otherwise the rivers of the west, east of the Rockies, run *away* from the settled areas towards the cold northern salt waters and this adversely affects their industrial utility. The Mackenzie River, which drains Great Slave Lake, is, with its headwaters, the longest river in Canada (2,635 miles) and its valley constitutes the natural transportation route through the Northwest Territories to the Arctic Ocean. From Fort Smith on the Slave River large river boats run without any obstruction to Aklavik on the delta of the Mackenzie, a distance of 1,292 miles. Table 3 gives the lengths of the principal rivers with their tributaries, classified according to the four major drainage basins.

3.—Lengths of Principal Rivers and Their Tributaries

Note.—In this table the tributaries and sub-tributaries are indicated by indentation of the names. Thus the Ottawa and other rivers are shown as tributary to the St. Lawrence, and the Gatineau and other rivers as tributary to the Ottawa.

Drainage Basin and River	Length miles	Drainage Basin and River	Length miles
Flowing into the Atlantic Ocean		Flowing into Hudson Bay—concluded	
St. Lawrence (to head of St. Louis, Minn.).....	1,900	Eastmain.....	510
Ottawa.....	696	Fort George (to Nichicum Lake).....	480
Gatineau.....	240	Attawapiskat.....	465
du Lièvre.....	205	Kazan.....	455
Coulonge.....	135	Nottaway (to head of Waswanipi).....	400
Madawaska.....	130	Waswanipi.....	190
Rouge.....	115	Nelson (to head of Lake Winnipeg).....	400
Mississippi.....	105	Rupert.....	380
Petawawa.....	95	Red (to head of Lake Traverse).....	355
South Nation.....	90	George (to Hubbard Lake).....	345
Dumoine.....	80	Moose (to head of Mattagami).....	340
North.....	70	Abitibi.....	340
North Nation.....	60	Mattagami.....	275
Saguenay (to head of Peribonca).....	475	Missinabi.....	265
Peribonca.....	280	Hayes.....	300
Mistassini.....	185	Winisk.....	295
Ashuapmucuan.....	165	Whale.....	270
St. Maurice.....	325	Harrikanaw.....	250
Mattawin.....	100	Great Whale.....	230
Manicouagan (to head of Racine de Bouleau).....	310	Leaf.....	165
Outardes.....	270		
Bersimis.....	240	Flowing into the Pacific Ocean	
Richelieu.....	210	Yukon (mouth to head of Nisutlin).....	1,979
St. Francis.....	165	Yukon (Int. Boundary to head of Nisutlin).....	714
Chaudière.....	120	Porcupine.....	590
Via the Great Lakes—		Lewes.....	338
French (to head of Sturgeon).....	180	Pelly.....	330
Sturgeon.....	110	Stewart.....	320
Grand.....	165	Macmillan.....	200
Thames.....	163	White.....	185
Spanish.....	153	Columbia (total).....	1,150
Trent.....	150	Columbia (in Canada).....	459
Mississagi.....	140	Kootenay (total).....	407
Nipigon (to head of Ombabika).....	130	Kootenay (in Canada).....	276
Moirs.....	60	Fraser.....	850
Thessalon.....	40	Thompson (to head of North Thompson).....	304
St. John.....	418	North Thompson.....	210
Romaine.....	270	South Thompson (to head of Shuswap).....	206
Natashquan.....	241	Nechako.....	287
Moisie.....	210	Stuart (to head of Driftwood).....	258
Hamilton.....	208	Chilcotin.....	146
Exploits.....	153	West Road (Blackwater).....	141
Naskaupi.....	152	Skeena.....	360
Cansariktok.....	139	Bulkley (to head of Maxam Creek).....	160
Eagle.....	138	Stikine.....	335
Miramichi.....	135	Alsek.....	260
Marguerite.....	130	Nass.....	236
Gander.....	102		
Flowing into Hudson Bay		Flowing into the Arctic Ocean	
Nelson (to head of Bow).....	1,600	Mackenzie (to head of Finlay).....	2,635
Saskatchewan (to head of Bow).....	1,205	Peace (to head of Finlay).....	1,195
South Saskatchewan.....	865	Finlay.....	250
Red Deer.....	385	Smoky.....	245
Bow.....	315	Little Smoky.....	185
Belly.....	180	Parsnip.....	145
North Saskatchewan.....	760	Athabasca.....	765
Red (to head of Shesenne).....	545	Pembina.....	210
Assiniboine.....	590	Liard.....	755
Souris.....	450	South Nahanni.....	350
Qu Appelle.....	270	Petitot.....	295
Winnipeg (to head of Firesteel).....	475	Fort Nelson.....	260
English.....	330	Hay.....	530
Churchill.....	1,000	Peel (to head of Ogilvie).....	425
Beaver.....	305	Arctic Red.....	310
Kokoak (to head of Kaniapiskau).....	660	Slave.....	258
Kaniapiskau.....	575	Twitya.....	200
Severn (to head of Black Birch).....	610	Back.....	605
Albany (to head of Cat).....	610	Coppermine.....	525
Dubawnt.....	580	Anderson.....	430
		Horton.....	275

The outstanding lakes of Canada are the Great Lakes, though only parts of these are in Canadian territory. The International Boundary between Canada and the United States passes through Lakes Superior, Huron, St. Clair, Erie and Ontario. Details are given in Table 4.

4.—Elevations, Areas and Depths of the Great Lakes

Lake	Elevation Above Sea Level	Length	Breadth	Maximum Depth	Total Area	Area on Canadian Side of Boundary
	ft.	miles	miles	ft.	sq. miles	sq. miles
Superior.....	602.23	383	160	1,302	31,820	11,200
Michigan (U.S.A.).....	580.77	321	118	923	22,400	—
Huron.....	580.77	247	101	750	23,010	13,675
St. Clair.....	575.30	26	24	23	460	270
Erie.....	572.40	241	57	210	9,940	5,094
Ontario.....	245.88	193	53	774	7,540	3,727

There are no tides in the Great Lakes although considerable variation in water levels is occasioned by strong winds.

Other large lakes of Canada, ranging in area from 9,000 to 12,000 sq. miles, are Lake Winnipeg, Great Slave Lake and Great Bear Lake. Apart from these, notable for size, are innumerable lakes scattered over that major portion of Canada lying within the Canadian Shield. In an area of 6,094 sq. miles, accurately mapped, south and east of Lake Winnipeg, there are 3,000 lakes. In an area of 5,294 sq. miles, accurately mapped, southwest of Reindeer Lake in Saskatchewan, there are 7,500 lakes.

5.—Elevations and Areas of Principal Lakes, by Province

NOTE.—Areas given are for mean water levels. For those reservoirs and lakes for which two elevations are given, HW means high water, LW low water, and N normal level.

Province and Lake	Elevation	Area	Province and Lake	Elevation	Area
	ft.	sq. miles		ft.	sq. miles
Newfoundland—			Quebec—concluded		
Deer.....	12	24	Kipawa.....	884	95
Gander.....	86	49	Lower Seal.....	860	130
Grand.....	270	140	Manicouagan.....	..	110
Melville.....	sea level	1,133	Manuan.....	1,340	100
Michikamau.....	1,650	566	Maricourt.....	..	110
Red Indian.....	500	65	Mattagami.....	615	88
Victoria.....	700	15	Minto.....	..	485
Nova Scotia—			Mistassini.....	1,243	840
Bras d'Or.....	tidal	360	Nichikun.....	1,760	150
New Brunswick—			Olga.....	635	50
Grand.....	tidal	65	Payne.....	..	230
Quebec—			Pipmakan.....	..	90
Abitibi (total, 350) part.....	868	55	Pletipi.....	..	138
Albanel.....	1,289	145	Quinze, des.....	HW 867	} 55
Baskatong (reservoir).....	HW 732	} 109	St. Francis, River St. Lawrence	N 857	
Bienville.....	LW 677		(total, 83) part.....	LW 151	} 63
Burnt (Brûlé).....	..	392	St. John.....	N 153	
Cabonga (reservoir) (Kakabonga).....	1,203	56	St. Louis.....	LW 321	} 375
Champlain (total, 360) part.....	1,185	} 66	St. Peter.....	LW 65	
Chibougamau.....	LW 1,169		Simard.....	N 67	} 57
Clearwater.....	..	18	St. Peter.....	LW 11	
d'Iberville.....	..	138	Timiskaming (total, 110) part.....	HW 856	} 59
Evans.....	612	410	Two Mountains.....	N 593	
Goelland.....	660	260	Waswanipi.....	584	} 55
Indian House.....	..	180		72	
Kaniapiskau.....	1,850	125	Ontario—	680	} 63
Kempt.....	1,372	63	Abitibi (total, 350) part.....	868	
			Dog.....	1,378	} 61
			Eagle.....	1,192	
			Erie (total, 9,940) part.....	572	137
					5,094

5.—Elevations and Areas of Principal Lakes, by Province—continued

Province and Lake	Elevation ft.	Area sq. miles	Province and Lake	Elevation ft.	Area sq. miles
Ontario—concluded			Manitoba—concluded		
Huron, including Georgian Bay (total, 23,010) part.....	581	13,675	Waterhen.....	829	90
Kesagami.....	90		Wekusko.....	840	64
La Croix (total, 55) part.....	1,181	25	Winnipeg.....	713	9,094
Long.....	1,025	75	Winnipegosis.....	831	2,086
Manitou, Kenora.....	1,215	60	Woods, Lake of the (total, 1,455) part (reservoir).....	HW 1,062 LW 1,056	69
Mille Lacs, Lac des.....	1,491	102	Saskatchewan—		
Minnitaki.....	1,177	72	Amisk.....	964	168
Nipigon.....	852	1,870	Athabasca (total, 3,058) part.....	699	2,165
Nipissing.....	643	330	Bernard.....	1,294	72
Ontario (total, 7,540) part.....	246	3,727	Black Birch.....	1,517	54
Rainy (total, 345) part (reser- voir).....	HW 1,108 LW 1,103	275	Candle.....	1,620	56
Red.....	1,157	69	Canoe.....	1,415	78
St. Clair (total, 460) part.....	575	270	Churchill.....	1,382	213
St. Francis, River St. Lawrence (total, 83) part.....	N 151	20	Cold (total, 136) part.....	1,756	36
St. Joseph.....	1,219	187	Cree.....	1,541	446
Sandy.....	1,190	270	Cumberland.....	871	93
Seul (reservoir).....	HW 1,172 LW 1,156	530	Deschambault.....	1,072	209
Simcoe.....	718	280	Doré.....	1,506	248
Stout, Berens River.....	1,039	50	Île à la Crosse.....	1,379	165
Sturgeon, English River.....	1,342	110	Kamuchawie (total, 56) part.....	1,153	26
Superior (total, 31,820) part.....	602	11,200	Kipahigan (total, 59) part.....	963	30
Timagami.....	962	90	La Plonge.....	1,476	90
Timiskaming (total, 110) part.....	HW 593 N 534	55	La Ronge.....	1,198	450
Trout, English River.....	1,294	156	Last Mountain.....	1,608	89
Trout, Severn River.....		215	Loche, la.....	1,459	70
Woods, Lake of the (total, 1,485) part (reservoir).....	HW 1,062 LW 1,056	953	Montreal.....	1,608	162
Manitoba—			Nomeau (total, 79) part.....	873	71
Athapapuskow.....	951	104	Nemiben.....	1,259	63
Atikameg.....	855	112	Peter Pond.....	1,382	302
Beaverhill.....	651	70	Primrose (total, 181) part.....	1,964	173
Cedar.....	829	537	Quill.....	1,704	236
Cormorant.....	840	134	Reindeer (total, 2,444) part.....	1,150	2,058
Cross Nelson River.....	679	274	Riou.....	915	75
Dauphin.....	853	200	Sisipuk (total, 99) part.....	1,572	110
Dog.....	815	64	Smoothstone.....	1,262	159
Etawnei.....	28		Snake.....	1,130	156
Gods.....	585	319	Tazin.....	1,300	796
Goose.....	935	53	Wollaston.....		
Granville.....	850	181	Alberta—		
Island.....	744	550	Athabasca (total, 3,058) part.....	699	893
Kamuchawie (total, 56) part.....	1,153	30	Beaverhill.....	2,202	80
Kipahigan (total, 59) part.....	963	29	Biche, la.....	1,784	94
Kiskitto.....	696	65	Buffalo.....	2,566	56
Kiskittogisu.....	709	99	Calling.....	1,947	55
Kisiasing.....	920	141	Claire.....	699	545
Manitoba.....	813	1,817	Cold (total, 136) part.....	1,756	100
Molson.....	154		Lesser Slave.....	1,893	461
Moose.....	838	525	Mamawi.....	699	64
Nameau (total, 79) part.....	873	8	Peerless.....	2,267	75
Northern Indian.....	725	150	Primrose (total, 181) part.....	1,964	8
Nueltin (total, 336) part.....	76		Sullivan (variable).....	2,652	62
Oxford.....	612	155	Utikuma.....	2,105	85
Paint.....	615	54	British Columbia—		
Pelican, west of Lake Winnep- egosis.....	837	80	Adams.....	1,334	52
Playgreen.....	711	257	Atlin (total, 308) part.....	2,200	307
Red Deer, west of Lake Winni- pegosis.....	862	86	Babine.....	2,330	194
Reed.....	911	78	Chilko.....	3,842	75
Reindeer (total, 2,444) part.....	1,150	380	Eutsauk.....	2,817	96
St. Martin.....	798	125	François.....	2,345	91
Seting.....	737	49	Harrison.....	34	87
Sipiwek.....	598	201	Kootenay.....	1,741	168
Sisipuk (total, 99) part.....	915	73	Kotcho (unsurveyed and esti- mated).....		90
Southern Indian.....	835	1,060	Lower Arrow.....	1,379	59
Stevenson.....			Okanagan.....	1,123	136
Swan.....	849	100	Ootsa.....	2,666	50
Talbot.....	845	72	Quesnel.....	2,375	100
Todatara (total, 241) part.....		156	Shuswap.....	1,137	120
Walker.....	1,121	62	Stuart.....	2,225	139
			Tagish (total, 138) part.....	2,148	93
			Takla.....	2,270	102
			Teslin (total, 161) part.....	2,250	65
			Upper Arrow.....	1,895	88

5.—Elevations and Areas of Principal Lakes, by Province—concluded

Territory and Lake	Elevation	Area	Territory and Lake	Elevation	Area
	ft.	sq. miles		ft.	sq. miles
Northwest Territories—			Northwest Territories—concluded		
Aberdeen.....	130	475	Martre, la.....	..	685
Artillery.....	1,190	207	Nueltin (total, 336) part.....	..	260
Aylmer.....	1,230	340	Nutarawit.....	..	350
Baker.....	30	975	Pelly.....	..	331
Clinton-Colden.....	1,226	253	Point.....	..	295
Dubawnt.....	500	1,600	Rae.....	748	74
Faber.....	753	163	Schultz.....	115	110
Franklin.....	..	175	Thaalintoa.....	..	160
Garry.....	..	980	Todatara (total, 241) part.....	..	85
Gras, de.....	1,300	345	Yathkyed.....	300	860
Great Bear.....	391	12,000	Yukon Territory—		
Great Slave.....	495	11,170	Aishihik.....	..	107
Hardisty.....	699	107	Atlin (total, 308) part.....	2,200	1
Hottah.....	..	377	Kluane.....	2,500	184
Kaminuriak.....	320	360	Kusawa.....	2,565	56
Macdougall.....	..	265	Laberge.....	2,100	87
Mackay.....	1,415	250	Tagish (total, 138) part.....	2,148	45
Maguse.....	..	540	Teslin (total, 161) part.....	2,250	96
Marian.....	495	90			

Subsection 3.—Coastal Waters

The coastline of Canada, one of the longest of any country in the world, comprises the following estimated milages:—

Mainland—

Atlantic, 6,110; Pacific, 1,580; Hudson Strait, 1,245; Hudson Bay, 3,155; Arctic, 5,770; total, 17,860 miles.

Islands—

Atlantic, 8,680; Pacific, 3,980; Hudson Strait, 60; Hudson Bay, 2,305; Arctic, 26,785; total, 41,810 miles.

A comprehensive description of the coastal waters of Canada would require information from sciences such as oceanography, marine biology and meteorology. However, the basic factor in any study of the oceanic-continental margin is the physical relief of the sea floor and the scope of the information presented here is therefore restricted to this and a few salient features of the Atlantic, Arctic and Pacific marginal seas surrounding Canada. Further details are given in the 1947 Year Book, pp. 3-12.

Atlantic.—Along this coastal area, the sea has inundated valleys and lower parts of the Appalachian Mountains as well as those of the Canadian Shield. The submerged Continental Shelf, protruding seaward from the shore, effects the transition from continental to oceanic conditions. This Shelf is distinguished by great width and diversity of relief. From the coast of Nova Scotia its width varies from 60 to 100 miles, from Newfoundland 120 to 50 miles (at the entrance of Hudson Strait), and northward it merges with that of the Arctic Ocean. The outer edge of the Shelf, known as the Continental Shoulder, is of varying depths of from 100 to 200 fathoms before the Shelf suddenly gives way to the steep declivity leading to abyssal depths. The over-all gradient of the Atlantic Continental Shelf is slight but the whole area is studded with shoals, plateaus, banks, ridges and islands and the coasts of Nova Scotia and Newfoundland are rugged and fringed with islets and shoals. Off Nova Scotia the 40-fathom line lies at an average of 12 miles from the shore and constitutes the danger line for coastal shipping. The whole floor of the marginal sea appears to be traversed by channels and gullies cutting well into the Shelf.

The main topographical features of the Atlantic marginal sea floor are attributed to glacial origin but land erosion is an important factor. Eroded materials are carried seaward by rivers, ice and wind, and wave action against cliffs and shore banks washes away enormous masses that are deposited over the surrounding sea floor. The topography of the continental sea floor is therefore constantly changing and navigation charts of Canada's eastern seaboard must be continuously revised.

Arctic.—The submerged plateau protruding from the northern coast of North America is a major part of the Great Continental (or Polar) Shelf surrounding the Arctic Ocean on which lie all the Arctic islands of Canada, Iceland, Greenland and most of those of Europe and Asia. This Shelf develops its maximum width on the 80th meridian of west longitude where it extends from the south of James Bay to the north coast of Ellesmere Island, a distance of over 2,000 miles.

The floor topography of this continental margin is largely unexplored but sufficient has been charted to indicate an abrupt break at the northern oceanward edge. This steep continental terrace borders the whole western side of the Canadian Archipelago and constitutes one of the most striking and significant features of the Polar regions. From this declivity, deep well-developed troughs cut by glaciers enter between the western group of islands. A ridge across Davis Strait on which the depth is about 200 fathoms separates this basin from the open Atlantic.

Hudson Bay and Hudson Strait bite deeply into the Continent. Hudson Bay is an inland sea 250,000 sq. miles in area having an average depth of about 70 fathoms; the greatest charted depth in the centre of the Bay is 141 fathoms.

Hudson Strait separates Baffin Island from the continental coast and connects Hudson Bay with the Atlantic Ocean. It is 430 miles long and from 37 to 120 miles wide and its greatest charted depth of 481 fathoms is close inside the Atlantic entrance. Great irregularities of the sea floor are indicated but, except in inshore waters, few navigation hazards have been located.

That part of the Continental Shelf bordering the Arctic Ocean at the northwest edge of the Queen Elizabeth Islands is to be the subject of extensive study. In 1959 a party based at the joint Canadian-United States weather station at Isachsen on Ellef Ringnes Island made a reconnaissance survey of the oceanography, hydrography, submarine geology, gravity and magnetic features of the Shelf area, together with physiographic, hydrological and glaciological studies of the adjacent and intervening islands. These studies were carried out in preparation for an intensive program of survey and research to be started in 1960, which should ultimately yield detailed and accurate information on the physical and chemical composition and dynamic characteristics of the Arctic oceanic waters; the extent, topography and structure of the Shelf and the nature of its sediments, its underlying rocks and its possible mineral resources; the factors controlling the development of the Arctic landscape and the evolution of the islands; the behaviour of sea level, glaciers, sea ice and climate in the recent geological past. Detailed studies will be carried out first on that part of the Continental Shelf lying out to sea from, and between, Meighen Island and Borden Island, with a reconnaissance to the southwest. The work will continue until all of the Canadian sector of the Polar Continental Shelf has been investigated.

Pacific.—The marginal sea of the Pacific differs strikingly from the other marine zones of Canada. The hydrography of British Columbia is characterized by bold, abrupt relief—a repetition of the mountainous landscape. Numerous inlets penetrate the mountainous coast for distances of 50 to 75 miles. They are usually a mile or two in width and of considerable depth, with steep canyon-like sides. From the islet-strewn coast, the Continental Shelf extends from 50 to 100 sea miles to its oceanward limit where depths of about 200 fathoms are found. There the sea floor drops rapidly to the Pacific Deep, parts of the western slopes of Vancouver Island and the Queen Charlotte Islands lying only four miles and one mile, respectively, from the edge of the declivity. These great detached land masses are the dominant features of the Pacific marginal sea. As is to be expected in a region so irregular in hydrographic relief, shoals and pinnacle rocks are numerous, necessitating cautious navigation. A grave menace to coastal shipping plying

the Seymour Narrows between Vancouver Island and the mainland was eliminated on Apr. 5, 1958 when the twin peaks were blasted off Ripple Rock in one of the largest non-atomic explosions created by man. The peaks had reached to within 9 feet and 21 feet of the surface during low water, and had been responsible for the sinking and damaging of some 114 vessels during the preceding 80 years. Their presence caused treacherous disturbances and whirlpools to form as the ocean tides rushed through the Narrows, and only the most highly powered vessel would attempt to navigate the channel during any period other than the 20 to 40 minutes of slack water between tides. The blast increased the clearance to 47 feet and 69 feet at low water and the channel is now navigable at all times.

Subsection 4.—Islands

The largest islands of Canada are in the north and all experience an Arctic climate. The northern group extends from the islands in James Bay to Ellesmere Island which reaches 83°07'N. Those in the District of Franklin lie north of the mainland of Canada and are generally referred to as the Canadian Arctic Archipelago; those in the extreme north—lying north of the M'Clure Strait—Viscount Melville Sound—Barrow Strait—Lancaster Sound water passage—are known as the Queen Elizabeth Islands.

On the West Coast, Vancouver Island and the Queen Charlotte Islands are the largest and the most important but the coastal waters are studded with many small rocky islands.

The Island of Newfoundland forming part of the Province of Newfoundland, the Province of Prince Edward Island, Cape Breton Island forming part of the Province of Nova Scotia, Grand Manan and Campobello Islands forming part of the Province of New Brunswick, and Anticosti Island and the Magdalen group included in the Province of Quebec are the chief islands off the East Coast.

Notable islands of the inland waters include Manitoulin Island (1,068 sq. miles in area) lying in Lake Huron, the so-called Thirty Thousand Islands of Georgian Bay and the Thousand Islands in the outlet from Lake Ontario into the St. Lawrence River.

6.—Islands over 2,000 Square Miles in Area

Island	Area	Island	Area
	sq. miles		sq. miles
Arctic Ocean—		Arctic Ocean—concluded	
Baffin.....	183,810	Prince Charles.....	3,500
Ellesmere.....	82,119	Cornwallis.....	2,670
Victoria.....	81,930	Amund Ringnes.....	2,515
Banks.....	23,230		
Devon.....	20,861	Atlantic Ocean—	
Melville.....	16,141	Newfoundland.....	42,734
Axel Heiberg.....	15,779	Cape Breton.....	3,970
Southampton.....	15,700	Anticosti (Gulf of St. Lawrence).....	3,043
Prince of Wales.....	12,850	Prince Edward.....	2,184
Somerset.....	9,370		
Prince Patrick.....	6,081	Pacific Ocean—	
Bathurst.....	6,041	Vancouver.....	12,408
Ellef Ringnes.....	5,139		
King William.....	4,870		
Bylot.....	4,200		

Subsection 5.—Mountains and Other Heights

The predominant geographical feature in Canada is the Great Cordilleran Mountain System which contains many peaks over 10,000 feet in height. The highest peak in Canada is Mount Logan in the St. Elias Mountains of Yukon Territory, which rises 19,850 feet above sea level. The highest elevations in all parts of the country are shown in Table 7 in feet above mean sea level.

7.—Principal Heights in each Province and Territory

Note.—Certain peaks, indicated by an asterisk (*), form part of the line of demarcation between political subdivisions. Although their bases technically form part of both areas, they are listed only under one to avoid duplication.

Province and Height	Elevation	Province and Height	Elevation
	ft.		ft.
Newfoundland		Ontario	
Long Range—		Tip Top Hill.....	2,120
Blow Me Down Mountain.....	3,500	Mount Batchawana.....	2,100
Gros Morne.....	2,651	Niagara Escarpment—	
Mount St. Gregory.....	2,338	Osler Bluff.....	1,700
Gros Pate.....	2,115	Caledon Mountain.....	1,400
Blue Mountain.....	2,085	Blue Mountain.....	1,250
Table Mount.....	1,700	High Hill.....	1,150
		Mount Nemo.....	1,000
Blue Hills of Coteau—		Manitoba	
Peter Snout.....	1,690	Duck Mountain.....	2,727
Butter Pot.....	950	Porcupine Mountain.....	2,700
Red Hill.....	700	Riding Mountain.....	2,000
Central Highlands—		Saskatchewan	
Main Topsail.....	1,822		
Mizzen Topsail.....	1,761	Cypress Hills (Summit).....	4,810
Tornjats—		Wood Mountain (West Summit).....	3,371
Cirque Mountain.....	5,500	Wood Mountain (East Summit).....	3,347
Mount Eliot.....	4,560	Vermilion Hills.....	2,500
Mount Tetragona.....	4,510		
Mount Razorback.....	3,660	Alberta	
Mount Sir Donald.....	1,890	Rockies—	
Cape Chidley.....	1,500	*Mount Columbia.....	12,294 ¹
Kaumajets—		The Twins (N Peak).....	12,085
Bishop's Mitre.....	2,250	Mount Forbes.....	11,902
		Mount Alberta.....	11,874
Nova Scotia		*Mount Assiniboine.....	11,870 ¹
Ingonish Mountain.....	1,392	The Twins (S Peak).....	11,675
Creignish Hills (at Creignish).....	850	Mount Temple.....	11,636
Cobequid Mountains (at E Mapleton).....	840	Mount Kitchener.....	11,500
North Mountain (4 miles NE of Annapolis).....	590	*Mount Lyell.....	11,495 ¹
South Mountain (at Annapolis).....	515	*Mount Hungabee.....	11,457 ¹
		Mount Athabasca.....	11,452
New Brunswick		*Mount King Edward.....	11,400 ¹
Mount Carleton.....	2,690	Stutfield.....	11,400
Green Mountain.....	1,595	Mount Brazeau.....	11,386
Moose Mountain.....	1,490	*Mount Victoria.....	11,365 ¹
		*The Snow Dome.....	11,340 ¹
Quebec		*Mount Joffre.....	11,316 ¹
Appalachians—		*Mount Deltaform.....	11,235 ¹
Mount Jacques Cartier (Shickshocks).....	4,150	*Mount Lefroy.....	11,230 ¹
Mount Richardson.....	3,885	*Mount Alexandra.....	11,214 ¹
Barn Mountain.....	3,775	*Mount Sir Douglas.....	11,174 ¹
Mount Logan.....	3,700	Woolley.....	11,170
Mégantic Mountain.....	3,625	*Lunette Peak.....	11,150 ¹
Mount Albert.....	3,550	Mount Hector.....	11,135
Bayfield Mountain.....	3,470	Diadem Peak.....	11,060
Mattawa Mountain.....	3,370	Mount Edith Cavell.....	11,033
Roundtop (Sutton Mountains).....	3,175	Mount Chown.....	10,930
Hereford Mountain.....	2,760	Mount Wilson.....	10,631
Orford Mountain.....	2,750	Clearwater Mountain.....	10,420
Pinnacle Mountain.....	2,150	Mount Coleman.....	10,262
Brome Mountain.....	1,800	Eiffel Peak.....	10,101
Shefford Mountain.....	1,725	Pinnacle Mount.....	10,072
Shield—		Mount Fryatt.....	9,833
Mount Tremblant.....	3,150	Mount Rundle.....	9,744
Mount Ste. Anne.....	2,625	The Three Sisters.....	8,750
Monteregian Hills—		Mount Eisenhower.....	8,750
St. Hilaire Mountain.....	1,350	Mount Edith.....	8,370
Yamaska Mountain.....	1,350		
Rougemont.....	1,200	British Columbia	
Mount Johnson.....	750	Vancouver Island Range—	
Mount Royal.....	750	Mount Albert Edward.....	6,968
		Mount Arrowsmith.....	5,960

7.—Principal Heights in each Province and Territory—concluded

Province and Height	Elevation	Province or Territory and Height	Elevation
	ft.		ft.
British Columbia—continued		British Columbia—concluded	
Coast Range—		Rockies—concluded	
Mount Waddington.....	13,260	Mount Stephen.....	10,495
Tiedemann.....	12,000	Cathedral Mountain.....	10,464
Mount Tatlow.....	10,050	Mount Gordon.....	10,346
Skihst Mountain.....	9,660	President.....	10,287
Crown Mountain.....	6,060	Mount Odaray.....	10,175
St. Elias Mountains—		Mount Laussedat.....	10,035
*Mount Fairweather.....	15,300 ²	Mount Burgess.....	8,473
*Mount Root.....	12,860 ²		
Columbia Mountains—			
Monashee.....		Yukon Territory	
Mount Begbie.....	8,956	St. Elias Mountains—	
Storm Hill.....	5,300	Mount Logan.....	19,850
Selkirk—		*Mount St. Elias.....	18,008 ²
Mount Sandford.....	11,590	Mount Lucania.....	17,150
Mount Wheeler.....	11,033	King Peak.....	17,130
Selwyn.....	11,023	Mount Steele.....	16,440
Mount Dawson.....	11,020	Mount Wood.....	15,880
Adamant Mountain.....	10,980	*Mount Vancouver.....	15,700 ²
Grand Mountain.....	10,842	*Mount Hubbard.....	14,950 ²
Mount Sir Donald.....	10,818	Mount Walsh.....	14,780
Iconoclast Mountain.....	10,630	*Mount Alverstone.....	14,500 ²
Mount Rogers.....	10,525	McArthur Peak.....	14,400
Purcells—		Mount Augusta.....	14,070
Mount Delphine.....	11,076	Strickland.....	13,818
Nelson Peak.....	10,772	Mount Newton.....	13,811
Rockies—		Mount Cook.....	13,760
Mount Robson.....	12,972	Mount Craig.....	13,250
Clemenceau.....	12,001	Badham.....	12,625
Mount Goodsir.....	11,686	Mount Malaspina.....	12,150
Mount Bryce.....	11,507	Mount Jeannette.....	11,700
Resplendent.....	11,240	Baird.....	11,375
Mount King George.....	11,226	Mount Seattle.....	10,070
Consolation.....	11,200		
The Helmet.....	11,160	Northwest Territories	
Whitehorn Mountain.....	11,101	Franklin Mountains—	
Mount Huber.....	11,051	Mount Dethore.....	6,800
Geikie.....	11,016	Mount Clark.....	4,733
Bush.....	11,000	Mount Rawlinson.....	5,000
Freshfield.....	10,945	Nelson Head.....	1,000
Mount Mummery.....	10,918	Mount Pelly.....	675
Mount Vaux.....	10,881		
*Mount Ball.....	10,865 ¹		
Mount Sir Alexander.....	10,740		
Churchill Peak.....	10,500		

¹ Part of the Alberta-British Columbia boundary.² Part of the British Columbia-Alaska boundary.³ Part of the Yukon-Alaska boundary.

Section 2.—Physical and Economic Features of the Provinces and Territories

Politically, Canada is divided into ten provinces and two territories. Each of the provinces is sovereign in its own sphere, as set out in the British North America Act of 1867 and its amendments, and as new provinces have been organized (see p. 83) they have been granted political status equivalent to that of the original provinces. The Yukon and Northwest Territories are administered by the Federal Government, although they are gaining an increasing voice in their affairs through elected representatives in the House of Commons, through elected representatives on the Territorial Councils, and through municipal and other local organizations. The main physical and economic features of each of the provinces and of the territories are described briefly in the 1956 Year Book at pp. 12-17. The physical characteristics of the provinces and territories are also covered very adequately in their relation to climate in the special article on The Climate of Canada which appears in the 1959 edition at pp. 23-51. Details of resources and their development are given in later chapters of this volume.

PART II.—GEOLOGY

As stated on p. 2 in the Subsection on Physiographic Regions, the geological structure of the country dominates its relief and therefore the geological divisions and the physiographic regions, shown on the map on p. 3, generally coincide.

Over half of Canada consists of the Precambrian Canadian Shield that forms the central rocky upland which contains most of Canada's mineral resources, except for fossil fuels. The Shield is flanked by younger sedimentary rocks that contain, or may contain, reserves of petroleum, natural gas or coal, or all three. These form the units known as the Great Lakes St. Lawrence Lowlands, the Hudson Bay Lowlands, the Interior Plains and the Arctic Lowlands and Plateaus. On the east, the St. Lawrence Lowlands are flanked by the Appalachians of the Maritimes, Gaspé and Newfoundland where fossil fuels are found in sedimentary strata and metallic minerals occur in the rocks associated with igneous intrusions. The Cordilleran region of the western mountains, adjacent to the Interior Plains, is younger than the Appalachians but is the source of similar mineral deposits. Finally, the Inuitian region of Arctic mountains, in the Arctic Archipelago, probably also contains mineral deposits of many kinds though relatively little is as yet known of the potential.

A detailed treatment of the geology of Canada is given in the 1951 Year Book, pp. 14-26, although this account is somewhat outmoded by information secured in the intervening years. A later account is available in *Geology and Economic Minerals of Canada*, 4th edition (517 pp.) published in 1957 by the Geological Survey of Canada.*

THE GEOLOGICAL SURVEY OF CANADA†

The Geological Survey of Canada is, so far as is known, the oldest scientific organization in the Government of Canada. When the first United Parliament of Upper and Lower Canada met in July 1841 it considered a petition to carry out a geological survey, and on Sept. 10 of that year resolved "that a sum of money not exceeding one thousand five hundred pounds sterling, be granted to Her Majesty to defray the probable expense in causing a Geological Survey of the Province of Canada". William Logan was appointed geologist in the spring of 1842 and since then the Geological Survey of Canada has been in continuous operation. It is one of the oldest Geological Surveys in the world, that of the United Kingdom having been established in 1835 and that of the United States in 1879. Geological investigations had been carried out in Lower Canada and on the Island of Newfoundland before 1842 but these were local and sporadic.

Logan remained Director of the Survey until 1869 and following his retirement a younger man took over the direction of the mapping of the enormous expanse that Canada had become in 1867. The Survey expanded considerably in the next twenty years, and its officers explored, mapped and made scientific studies over much of the new land. For example, until the early 1950's virtually the only information available on the District of Keewatin in the Northwest Territories was that collected and compiled by J. B. Tyrrell in the 1890's. During this period of exploration the geologists acted as geographers, topographers, biologists and ethnologists and collected data on water power, forestry and agricultural possibilities. Many of the officers of that time have become national figures and their reports provide some of the most interesting accounts of the early systematic exploration of Canada. Among the better known names, besides that of Tyrrell who joined the Survey in 1871 and died in his 99th year in 1957, are Dawson and McConnell who explored much of the western mountains; Low, famous for his explorations in the Labrador peninsula; Faribault, who mapped Nova Scotia; and the Bells, Robert and McIntosh, who between them explored much of the Canadian North.

* Obtainable from the Queen's Printer or from the Geological Survey of Canada, Ottawa.

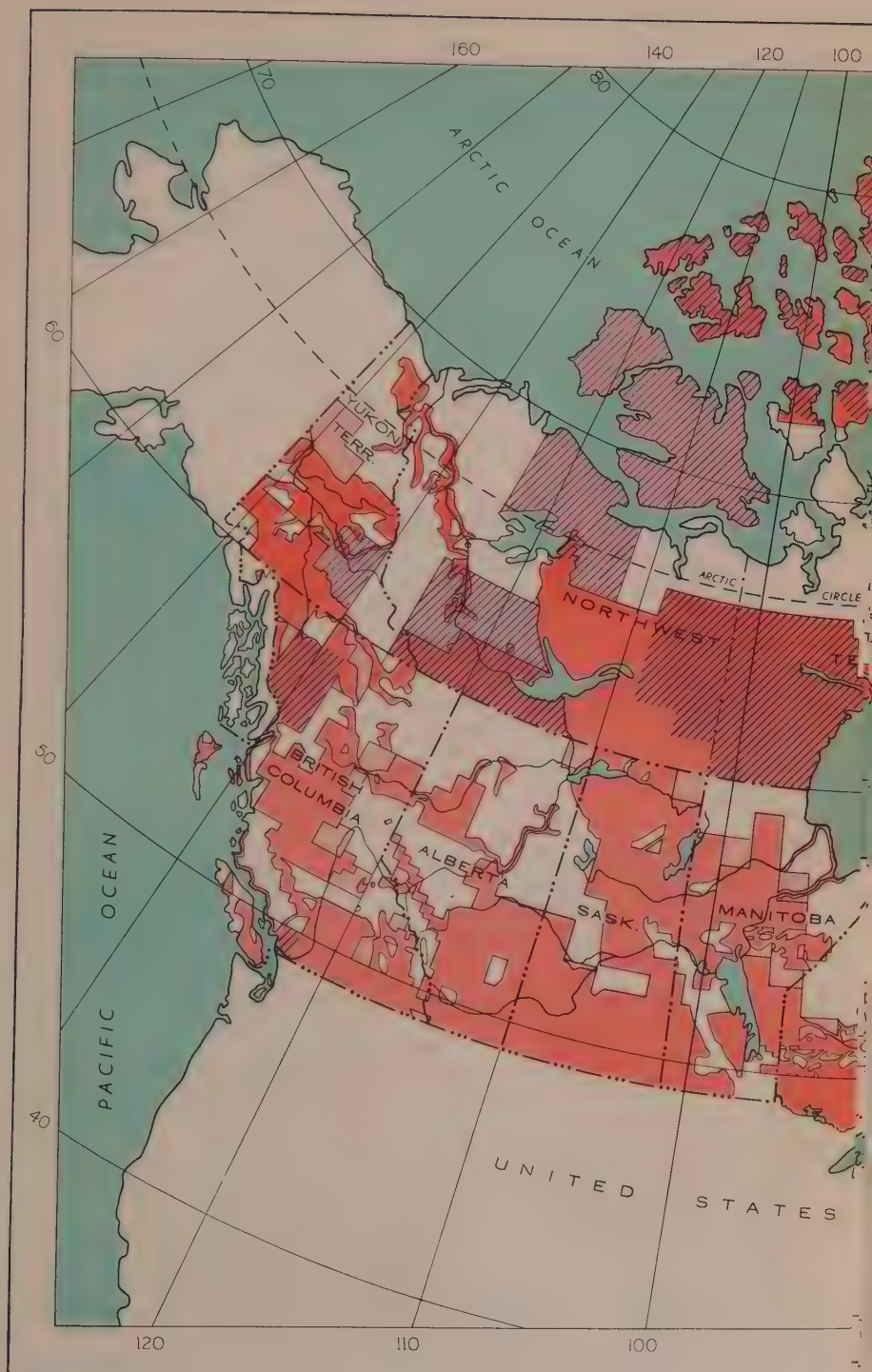
† Prepared by Dr. J. M. Harrison, Director, Geological Survey of Canada, Department of Mines and Technical Surveys, Ottawa.

About the turn of the century, mining began to assume an important role in the economy of the country. The far northern parts of Canada were generally inaccessible for mining, and geological work was therefore directed to detailed studies that would be of more immediate assistance to the development of a mining industry. About this time, too, the Ontario and Quebec Departments of Mines began geological studies. These are still expanding as are several other provincial organizations that came into being in the 1930's and 1940's. The turn of the century also saw increasing specializations, so that topographers, land surveyors, ethnologists and biologists were engaged, thus freeing geologists of all duties except their specialities. Today the Geological Survey of Canada is concerned only with geological studies.

In the first hundred years the Geological Survey was almost solely concerned with mapping but, immediately following World War II, laboratory investigations became of increasing importance and no doubt will become still more important. Nevertheless, the first priority of the Survey is to complete as soon as possible the reconnaissance geological mapping of Canada, an area of more than 3,800,000 sq. miles, of which only slightly more than half has so far been examined. Reconnaissance, or exploratory, mapping results in maps published on a scale of one inch to eight miles or four miles. Selected parts of such map-areas are then studied on a scale of one inch to one mile in those regions where the geological conditions appear economically worthwhile. Later, where important mineral deposits are known or important scientific data may be obtained, smaller areas are mapped on a scale of one inch to 1,000 feet, or even 200 feet. The Survey is essentially the only organization that undertakes mapping on reconnaissance scales, although some provincial governments have done so and certain mining exploration companies do so for their own information in geologically unmapped areas.

Geological maps are the basic tool for all geological investigations, for they provide the fundamental data on which all the studies depend. However, the immediate economic use of areal geological maps prepared by the Geological Survey of Canada and the provincial geological surveys is to guide prospectors by indicating the extension of rocks or structures already known to contain valuable mineral deposits. They are also the only means of evaluating the potential resources of unprospected areas which in the future may become accessible by railway or road, and they provide engineering data in rapidly expanding metropolitan areas. In many instances, however, no immediate economic use of a map may be foreseen because the area is inaccessible and because no valuable mineral deposits are known in it. But inaccessibility is relative, and as transportation improves even the most remote areas become of interest to the prospector. Demands for minerals also change and a mineral that is valueless today may be eagerly sought tomorrow. Thus, a geological map for many years may be of scientific interest only and then suddenly become of paramount economic interest. A recent example was the geological map of the Blind River area of Ontario, published by the Geological Survey in 1925. At that time uranium was not considered a valuable mineral nor was it known to occur in this area but almost thirty years later, in 1952, astute application of geological theory led to the realization that a particular rock unit shown on this map might hold deposits of uranium. The result was extensive staking of mining claims guided by this old map, and by 1955 a major new mining camp was established which now has the largest proved reserve of uranium ore in the world and which, in 1959, produced uranium precipitates valued at an estimated \$242,000,000. The Blind River map demonstrates that geological maps should be available in advance of demand. Geological mapping, if started after a major mineral discovery, cannot keep pace with needs, and large sums may be wasted through inefficient planning, prospecting and exploration.

Up to 1952, after 110 years of mapping, only about 1,000,000 sq. miles or slightly more than one-quarter of the land area of Canada had been geologically mapped on any scale whatsoever, and much of this mapping was not up to modern standards since it dated back to the old exploration surveys that were confined to navigable streams, shorelines of lakes, and mountain trails. Systematic mapping had gained considerable impetus in the 1930's



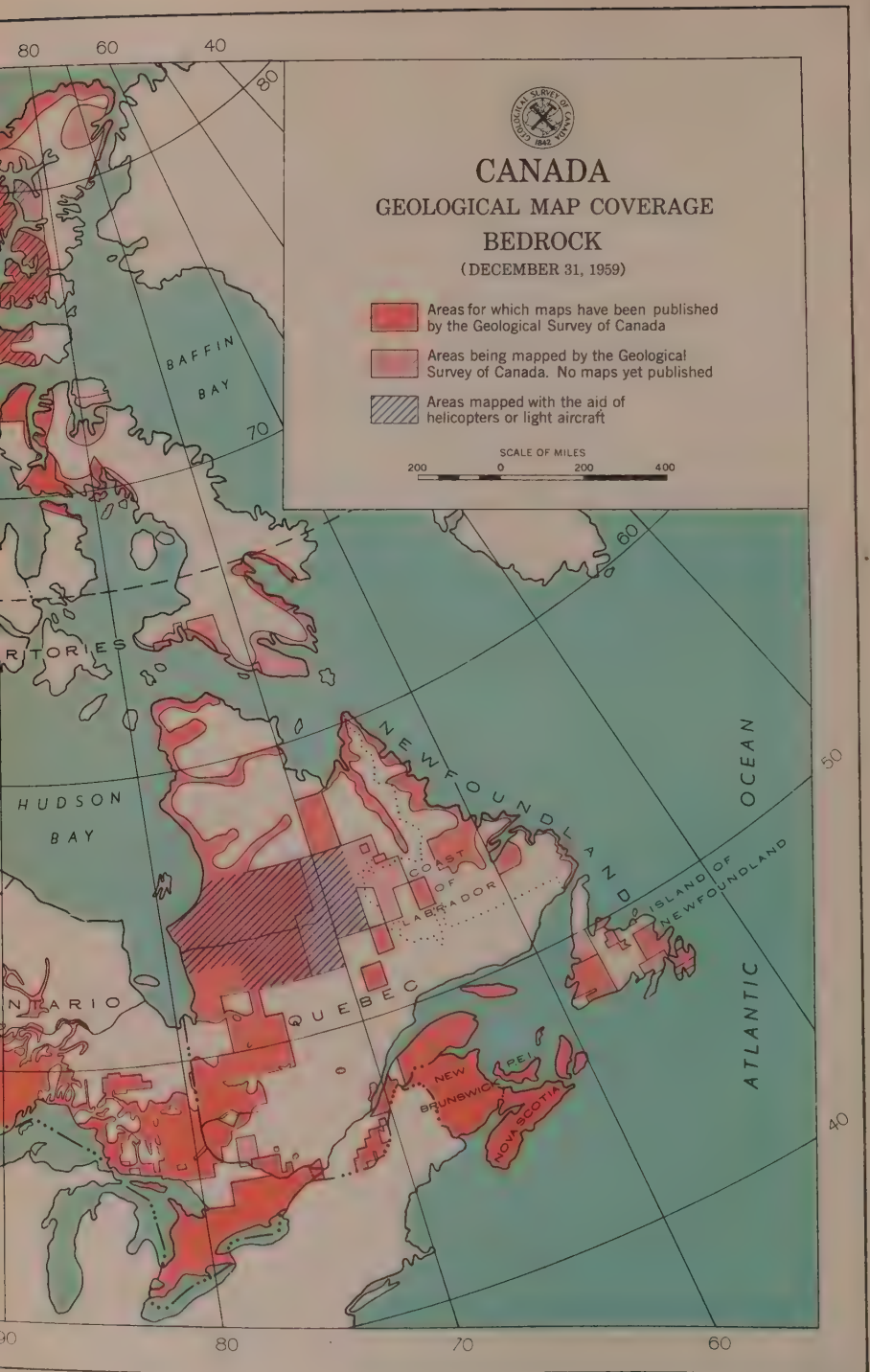


Figure 1.

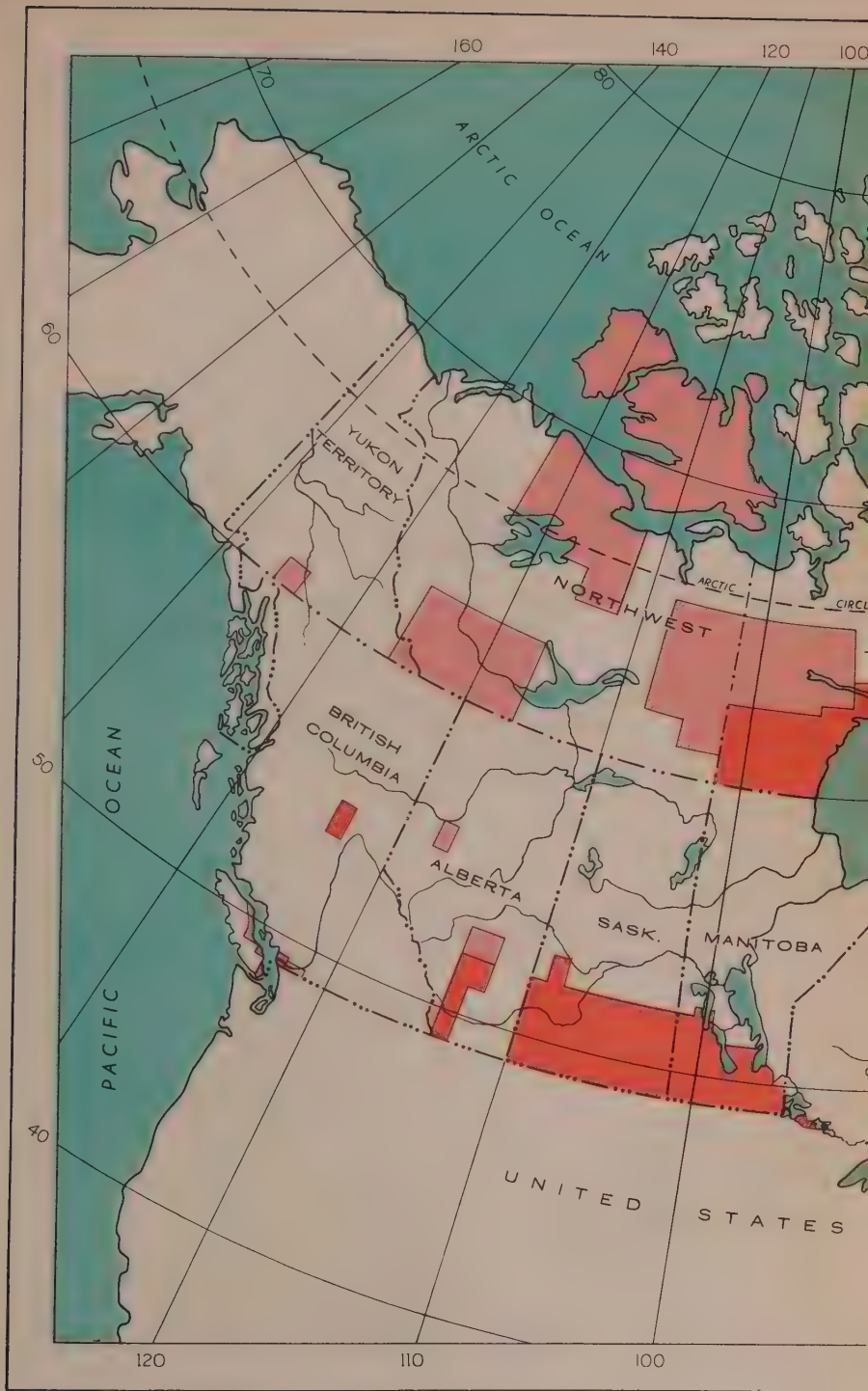
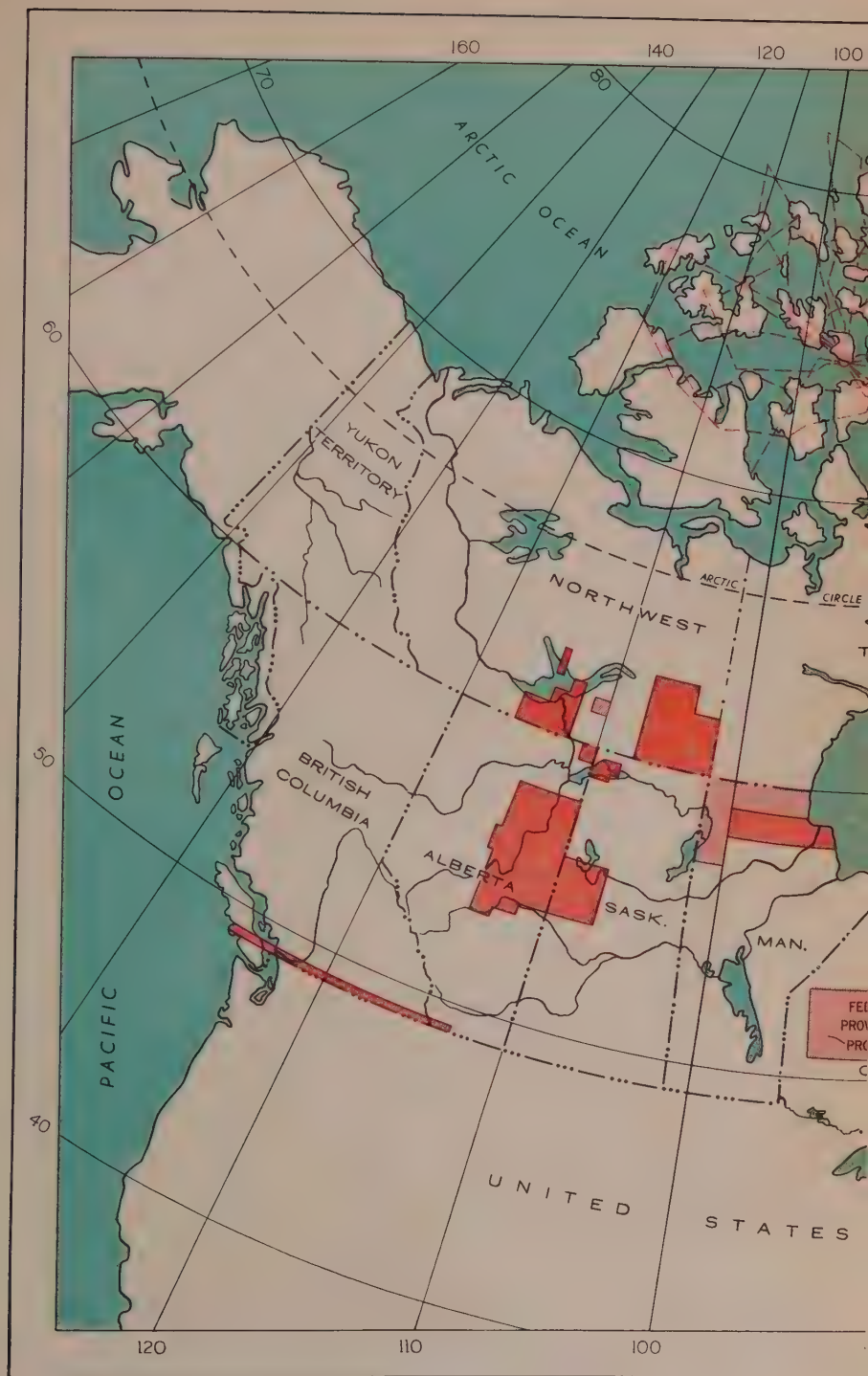




Figure 2.





with the use of "bush" aircraft but, even so, the area a reconnaissance party could investigate in one season was discouragingly small compared with the area still to be mapped. In 1952, however, the Geological Survey tried using helicopters for reconnaissance geology in the barren lands west from Hudson Bay and the experiment was a complete success. Five geologists mapped in one season an area that would have taken them about 25 years to map by previous methods, and at a lower cost per square mile. From 1952 to 1959 helicopter parties mapped about 625,000 sq. miles, including areas in northern British Columbia, Yukon Territory, the Mackenzie River basin, the Arctic islands, the Canadian Shield of the Northwest Territories and New Quebec, and Nova Scotia (Fig. 1). As a result of data made available from such helicopter reconnaissance by the Geological Survey in 1955, several oil companies have contracted to spend large sums of money on the search for oil in the Arctic islands. In 1958 and 1959 an experiment in aerial reconnaissance in the Western Arctic was carried out by field parties using Super-Cub aircraft fitted with oversize tires which enabled geologists to be landed in unprepared localities where rock outcrops merited examination; about 125,000 sq. miles were thus mapped in the two seasons of reconnaissance. Altogether, therefore, the Geological Survey has mapped nearly as much of Canada in the past eight years as had been mapped in the previous 110 years (Fig. 1). It now appears that the initial geological reconnaissance mapping of Canada will be completed in the next ten or twelve years, and even though this mapping is intended as a preliminary to detailed studies of the more promising areas, its immediate value has been clearly shown.

Besides field studies of the bedrock geology, the Survey is investigating the character of the great volume of unconsolidated material left behind as the Pleistocene ice-sheets retreated northwards. Only in recent years have systematic studies been possible and very little is known about the surficial geology of great areas in Canada (Fig. 2). These studies are not only of great scientific importance but also have much economic significance. The understanding of soil needs for agriculture and forestry and correct planning for land utilization depend to a large extent on knowledge of these Pleistocene strata. The deposits of sand and gravel that form part of the Pleistocene material are widely used in engineering works of all kinds, and some of them hold important quantities of underground water.

The prairies are depending more and more on sources of underground water for industrial, domestic and agricultural use, and the distribution of this underground water depends on the distribution of various kinds of rocks and unconsolidated materials in the area. Thus, usable water is confined to porous strata that allow the water to flow through them and these strata may accumulate large quantities of water from the rainfall of a vast area. It is to such underground water that the oases in the desert regions owe their existence, and it is on such water that the development of the Canadian prairies will increasingly depend. The Geological Survey is actively engaged in making studies of groundwater potentials in several regions of Canada, but systematic studies began only recently and a tremendous amount of work must still be done before even a first assessment of the potential supply can be made.

Reconnaissance geological mapping serves mainly to show where more detailed studies are required in order to understand the basic geological problems and provide specific data in the search for minerals, fuels and underground waters. The Geological Survey, therefore, has a considerable portion of its staff engaged on such detailed studies. These include detailed mapping in a mining area in Manitoba, special studies of sub-surface geology related to petroleum and natural gas in the western plains and Eastern Canada, engineering geology for the St. Lawrence Seaway and in the selection of hydro-electric dam sites in Yukon Territory, investigations on underground supplies of water in British Columbia and Saskatchewan, and detailed studies of the unconsolidated glacial deposits in Alberta and Ontario. Thus is exemplified the diversity of field geology.

FIELD GEOLOGY

◀ Investigating a sheer drop in the rugged interior of British Columbia.



▶ Geologist examining an outcrop with a quartz vein in the Yellowknife area of the Northwest Territories.



▶ An Arctic campsite—here, as in all remote and otherwise inaccessible areas the helicopter is essential as a transport vehicle.



Geological findings are plotted on maps at field camps.



◀ Typical Canadian Shield country—much of which is now undergoing initial geological reconnaissance mapping.

Although field mapping is vital to geology, answers to many problems can be found only by laboratory investigation. In the past few years much more adequate facilities have become available for such investigations. The new Geological Survey building in Ottawa, which was occupied in 1959, contains laboratories designed for many kinds of study, and research already under way and planned for the future will help greatly in extending the science of geology. Most of the problems studied are those that result from field mapping. For example, it is important to know the age of the rocks relative to each other, and in areas where rocks contain fossils the palaeontologist can provide such information. About half of Canada is underlain by such rocks, including those parts where petroleum and coal are likely to be found. Certain animals and plants lived only at specific times and their fossils can therefore be used to date the rocks. One of the first reports of the Geological Survey was based on knowledge of palaeontology and was concerned with the possibilities of finding coal in Upper Canada (southwestern Ontario). Logan pointed out that the fossils in the youngest rocks in the region were much older than those of the coal measures in the United States and England and for that reason searching for coal in that part of Canada would be wasted effort.

The other half of Canada, however, is underlain by rocks of the Precambrian Canadian Shield, which were formed in the early four-fifths of geological time. Life on the earth had not then evolved far enough to leave a fossil record by which the relative ages of the rocks can be ascertained. For these rocks, techniques have been devised to measure their age by the radioactive decay of minerals contained in them and the Survey is now systematically determining ages of rocks of the Shield by these techniques. In a few years the geological history of this vast period of time should be much better known.

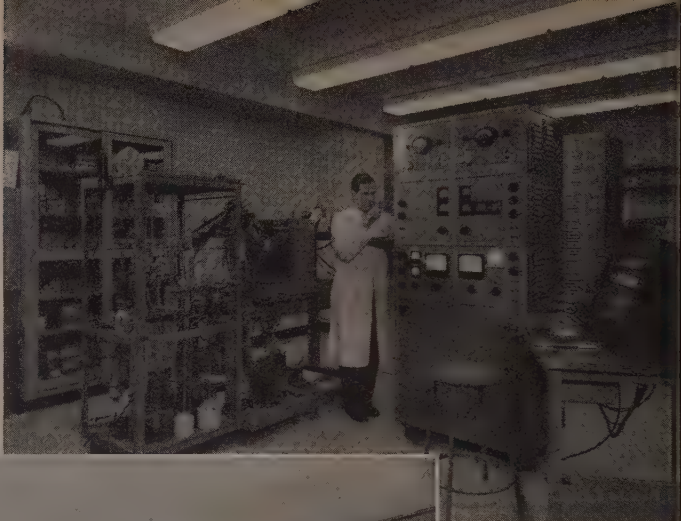
Dating of the youngest materials—those not more than 35,000 years old—is done by measuring the radioactivity of carbon. A new laboratory is being set up to provide dates on such material of Pleistocene age from which will be learned the detailed story of the ice ages in Canada and, of particular interest to archaeologists, when prehistoric man came to North America and something of his subsequent migrations.

Geochemistry is a relatively new science of great potential use in mineral exploration. Isotopes of such elements as sulphur, oxygen and lead, and the distribution of these isotopes in rocks, are being carefully studied as a clue to the origin of rocks and of the ore deposits they contain. A radio-chemistry laboratory is being established so that isotopes obtained from nuclear reactors at Chalk River may be used to study diffusion of fluids and chemical elements in rocks, and how elements are taken up by plants. A recently completed geochemical study in Nova Scotia, however, appears to have much more immediate practical application. Much of the mainland of that province was covered by a systematic geochemical survey of stream sediments. The muds from the streams were analysed for lead, zinc and copper, and the amounts of these metals were indicated on a map by contours in much the same way as contours on topographic maps show elevations. The high spots indicated on the maps, however, are not hills but the places where there are concentrations of these valuable metals. It is expected that the concentrations in the streams are close to rocks containing deposits of the same metals and therefore that such maps will lead to the discovery of commercial deposits. The method is not limited to Nova Scotia, of course, and will be used in many other parts of Canada.

Improved techniques now make it possible to analyse samples of bedrock for valuable metals and other elements in the field at the same time as the regular geological mapping is under way. This will improve the quality and usefulness of the maps by showing the distribution of metals and other valuable materials; they will thus be of direct assistance to the prospector in his search for ore deposits.

LABORATORY INVESTIGATIONS

The extensive laboratories of the new Geological Survey Building in Ottawa carry on where reconnaissance mapping leaves off. Only through detailed study can basic geological data obtained in the field be put to practical use in the search for ore deposits.

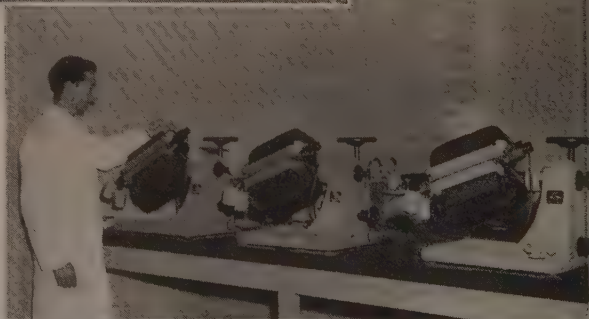
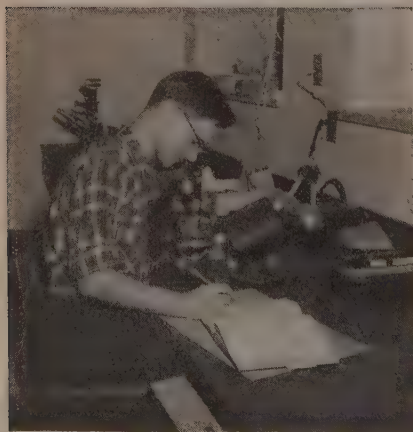


Mass spectrometer in determining absolute age of ancient rocks.

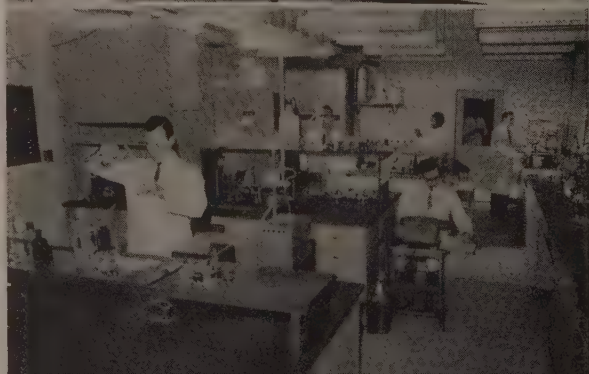
Infrasizers for separating very fine fractions from crustal rocks so that elements may be concentrated.



Geologist studying thin slices of rock to determine accurately the mineral components.



The possibilities of geochemistry as an aid in the discovery of mineral wealth are only beginning to be known.



The new Geological Survey building has a greenhouse on the roof which is being used to investigate the ways in which plants take up metals and other elements. Some plants concentrate these elements in their leaves or twigs and provide valuable clues in the search for minerals. Thus, if plants over a certain area contain an abundance of, say, copper, then it is possible that the source of the copper is a buried ore deposit. Much more needs to be learned about particular plants and the way they take up minerals before the method can be properly evaluated and applied. Geochemical studies of rocks, soil and plants may also be used to learn more about the accumulation, migration and trapping of petroleum and natural gas, and thus provide data that will help in discovery of future reserves. The possibilities of geochemistry as an aid in the discovery of mineral wealth are only beginning to be realized; a new frontier opens.

The Survey building also has laboratories providing precise analyses of minerals and rocks, special studies on coal seams, data on the deposition of sedimentary material, the mineral composition and origin of rocks, rapid proximate analyses of rocks, crushing of rocks for special studies, and many other problems.

About fifteen years ago an airborne magnetometer was obtained by the Survey. It has since been flown some 640,000 line miles and the resulting data have been published in hundreds of geophysical maps (Fig. 3). The magnetometer records the magnetic pull of the rocks beneath and it is possible, therefore, to recognize places where the magnetism of the rocks is unusually strong or unusually weak. The magnetism is commonly characteristic of the kind of rock, so that it may be possible, also, to trace formations in places where the rocks are covered by overburden or by younger rocks. The geologist is thus able to make his geological maps more accurate and more useful. Because the magnetometer is carried by an aircraft, large areas can be covered in a single season. Here and there a major variation in magnetism—an anomaly—may be recorded, as happened near Marmora in Ontario where an iron deposit was pin-pointed beneath a cover of 100 feet of younger rocks. Other geophysical methods are also being investigated in Survey laboratories in an effort to develop new means of obtaining data that will assist in the discovery of mineral deposits.

In 1959 the Geological Survey and the Ontario Department of Mines began a co-operative geophysical, geochemical and geological study of an area of about 65,000 sq. miles in northwestern Ontario, the better to select possible "roads to resources" in the region. This, it is hoped, is the forerunner of similar projects in other promising mineral areas of Canada.

Not more than 15 to 20 p.c. of Canada is now geologically mapped in adequate detail; the area still to be studied in the field and laboratory will keep geologists occupied for many generations. However, the continuance of this gigantic task will ensure Canada's place in the forefront of world production of metals, fuels and other mineral products.

PART III.—LAND RESOURCES AND PUBLIC LANDS

Section 1.—Land Resources

Information currently available regarding Canada's vast land resources is shown in Table 1, where the land area is classified as occupied agricultural, forested and 'other' land, the latter including urban land, road allowances, grass and brush land and all waste land such as open muskeg, swamp and rock. Soil surveys now under way by the Department of Agriculture will make it possible in the future to estimate the amount of arable land Canada possesses and, as provincial inventories are completed, more information will be available regarding land now non-forested but not productive in an agricultural sense. The Forestry Branch of the Department of Northern Affairs and National Resources estimates that about 48 p.c. of the land area of Canada is forested and, according to the Census of 1956, less than 8 p.c. is classed as occupied farm land. A great part of the 1,611,376 sq. miles of 'other' land is located in the Yukon and Northwest Territories which together have a land area of 1,458,784 sq. miles. The occupied farm land in these Territories is practically nil and the forested area is estimated at 275,800 sq. miles.

1.—Land Area classified as Occupied Agricultural or Forested, by Province

NOTE.—Figures for occupied agricultural land were obtained from the 1936 Census; areas of forested land were compiled by the Forestry Branch, Department of Northern Affairs and National Resources from estimates supplied by the Forestry Service in each province.

Description	New-found-land	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon and N.W.T.	Canada	
	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles
Occupied Agricultural Land													
Improved—Crops and summer fallow..	25	659	655	935	8,776	13,365	16,427	60,428	34,284	1,215	1	136,819	
Pasture.....	9	314	252	395	4,129	5,423	929	1,763	2,000	500	1	15,715	
Other.....	4	36	77	108	579	856	540	1,100	820	108		4,226	
Unimproved—Forested (woodland) ¹ ..	42	522	2,447	2,662	7,622	5,217	2,448	3,717	4,517	1,337	1	30,532	
Other.....	32	134	906	510	3,754	6,201	7,674	31,108	30,208	3,932	5	84,464	
Totals, Occupied Agricultural Land	112	1,665	4,337	4,658	24,860	31,062	28,018	95,116	71,829	7,092	7	271,756	
Forested Land													
Softwood—Merchantable.....	25,735	78	7,270	6,312	119,939	44,769	14,584	10,117	13,566	80,330	35,200	357,900	
Softwood—Young growth.....	3,389	186	789	2,895	45,138	36,958	20,434	2,734	14,831	87,786	10,000	225,140	
Mixedwood—Merchantable.....	128	133	5,458	7,319	23,975	25,002	5,606	9,011	12,367	—	19,800	108,799	
Mixedwood—Young growth.....	986	122	458	2,047	20,373	34,323	6,569	5,045	10,994	—	3,500	84,417	
Hardwood—Merchantable.....	31	12	659	1,944	3,110	6,006	3,524	9,205	4,973	3,945	4,700	38,109	
Hardwood—Young growth.....	236	11	45	955	5,928	17,494	4,939	1,774	13,263	7,953	2,500	55,098	
Unclassified ²	—	2	427	2,336	1,809	1,189	3,011	3,122	45,443	28,397	—	85,736	
Totals, Productive Forested Land	30,505	544	15,106	23,808	220,272	165,741	58,667	41,008	115,437	208,411	75,700	955,199	
Non-productive Forested Land ⁴	53,266	—	1,118	521	157,741	96,006	64,638	76,730	43,092	59,227	200,100	752,439	
Totals, Forested Land	83,771	544	16,224	24,329	378,013	261,747	123,305	117,738	158,529	267,638	275,800	1,707,638	
Net Productive Land ⁵	30,575	1,687	16,096	25,804	237,510	191,586	84,237	135,407	182,749	214,166	75,706	1,196,423	
Other Land ⁶	59,204	407	2,288	1,510	128,609	56,500	62,900	8,045	22,959	85,886	1,182,978	1,611,376	
Totals, Land Area ⁷	143,045	2,184	20,402	27,835	523,860	344,092	211,775	220,182	248,800	359,279	1,458,784	3,560,235	

¹ Less than one square mile.

² Included in Forested Land; duplication eliminated in the item Net Productive Land.

³ Includes areas of recent burn, cut-over or windfall, not yet re-stocked.

⁴ Areas incapable of producing crops of merchantable timber because of adverse climatic, soil or moisture conditions.

⁵ Includes only occupied agricultural land (less forest woodland) plus productive forested land.

⁶ Comprises all urban land, road allowances, grass and brush land and all waste land such as open muskeg, swamp and rock.

⁷ Net Productive Land plus Non-productive Forested Land plus Other Land.

Section 2.—Public Lands

In Table 2 classifying the area of Canada by tenure, items 2, 3, 4 and 5 are obtained from Federal Government sources and items 1, 6, 7 and 8 from Provincial Government sources.

2.—Total Area classified by Tenure (circa) 1959

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.
	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles
1. Privately owned land or land in process of alienation from the Crown.....	6,740	2,058	16,430	16,480	43,500	41,284
2. Federal lands other than leased lands, National Parks, Indian reserves and forest experiment stations.....	936	108	195	770	341 ¹	2,172
3. National Parks.....	156	7	368	80	²	12
4. Indian reserves.....	—	4	39	59	279	2,431
5. Federal forest experiment stations.....	—	—	—	35	7	97
6. Provincial lands other than Provincial Parks and provincial forest reserves.....	148,181	5	4,393	10,672	513,303	341,822
7. Provincial Parks.....	55	³	²	—	31,110	5,238
8. Provincial forest reserves.....	117	2	—	258	6,320	19,526
Totals.....	156,185	2,184	21,425	28,354	594,860	412,582
	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles	sq. miles
1. Privately owned land or land in process of alienation from the Crown.....	45,980	104,400	93,222	19,219	73	389,386
2. Federal lands other than leased lands, National Parks, Indian reserves and forest experiment stations.....	5,191	7,300	5,346	697	1,508,272 ⁴	1,531,328
3. National Parks.....	1,148	1,496	20,717 ⁴	1,671	3,625 ⁵	29,280
4. Indian reserves.....	819	1,884	2,418	1,281	9	9,223
5. Federal forest experiment stations.....	⁶	—	47	—	—	186
6. Provincial lands other than Provincial Parks and provincial forest reserves.....	191,508	14,149	124,778	287,324	—	1,636,135
7. Provincial Parks.....	968 ⁷	2,310	138	13,158	—	52,977
8. Provincial forest reserves.....	5,386 ⁷	120,161	8,619	42,905	—	203,294
Totals.....	251,000	251,700	255,285	366,255	1,511,979	3,851,809

¹ Includes Gatineau Park (86 sq. miles) and Quebec Battlefields Park (0.36 sq. mile) which are under federal jurisdiction but are not technically National Parks. ² Less than one square mile. ³ Includes 952,849 sq. miles set aside by Order in Council as native game preserves in which only Indians and Eskimos may hunt, but which are not regarded as National Parks. ⁴ Includes Wood Buffalo Park (13,675 sq. miles) which, although reserved by the Federal Government, is not administered as a National Park. ⁵ That part of Wood Buffalo Park in N.W.T. ⁶ A forest experiment area of 25 sq. miles is included in National Parks figure. ⁷ Provincial forest reserves are also used to some extent as recreational areas.

Subsection 1.—Federal Public Lands

Public lands under the administration of the Federal Government comprise lands in the Northwest Territories including the Arctic Archipelago and the islands in Hudson Strait, Hudson Bay and James Bay, lands in Yukon Territory, Ordnance and Admiralty Lands, National Parks and National Historic Sites, Forest Experiment Stations, Experimental Farms, Indian reserves and, in general, all public lands held by the several Departments of the Federal Government for various purposes connected with federal administration (see Table 2). These lands are administered under the Territorial Lands Act (RSC 1952, c. 263) and the Public Lands Grants Act (RSC 1952, c. 224) which became effective June 1, 1950 and replaced previous legislation.

The largest areas under federal jurisdiction are in the Northwest Territories and Yukon Territory where only 73 sq. miles of a total area of 1,511,979 sq. miles are privately owned. This part of the national domain, with the exception of the islands in Hudson Bay and James Bay, is all north of the 60th parallel of latitude and occupies about 40 p.c. of the surface of Canada. It is under the administration of the Northern Administration Branch of the Department of Northern Affairs and National Resources.

Subsection 2.—Provincial Public Lands

Public lands of Nova Scotia, New Brunswick, Quebec, Ontario and British Columbia (except the Railway Belt and Peace River Block) have been administered since Confederation by the provincial governments. In 1930 the Federal Government transferred the unalienated portions of the natural resources of Manitoba, Saskatchewan and Alberta and of sections of British Columbia to the respective governments and all unalienated lands in the Province of Newfoundland, except those administered by the Federal Government, became provincial public lands under the Terms of Union on Mar. 31, 1949. All land in the Province of Prince Edward Island has been alienated except 126 sq. miles under federal and provincial administration.

Information regarding provincial public lands may be obtained from the respective provinces. (See the Directory of Sources of Official Information, Chapter XXVII, under "Lands".)

Subsection 3.—National and Provincial Parks

The future of Canada in the field of outdoor recreation is being wisely provided for by the establishment of National and Provincial Parks. Many of these parks are easily accessible by highway, rail or air and offer every type of accommodation from camping facilities to cabins and palatial hotels. A wide variety of summer and winter recreational attractions is available in mountain, lakeland, woodland and seaside areas of exceptional scenic beauty.

The extent of the park areas in each province is given in Table 2 on p. 21; location, year of establishment, area, and main characteristics of each National Park are given in Table 3, which is followed by a brief description of the Provincial Parks.

National Parks.—Since 1885 when the first National Park was established around the mineral hot springs in western Alberta at what is now Banff, 18 areas with a total extent of more than 29,000 sq. miles have been established as National Parks. These parks are maintained by the Federal Government for the protection of their flora, fauna and natural phenomena, and for the preservation of their scenic beauty and national interest. They are administered by the National Parks Branch, Department of Northern Affairs and National Resources, and are developed and maintained in such manner as to constitute museums of nature for the perpetual inspiration, education and recreational use of present and future generations.

The National Parks are among Canada's greatest visitor attractions. All types of accommodation are available in privately owned hotels, chalets, lodges, motels and bungalow camps. In several of the Atlantic parks, motels and cabins built by the Parks

Administration have been leased to concessionaires, and in many parks modern camp grounds and trailer sites have been prepared for the use of visitors travelling with their own camping equipment. All kinds of recreational facilities are available—supervised bathing beaches, playgrounds, golf courses, tennis courts, bowling greens and athletic fields. In Banff, Kootenay and Jasper Parks where hot mineral springs occur, the Parks Service has provided outdoor pools, plunge baths and dressing-room facilities, and in other parks outdoor pools, with heated water, have been built. Several of the western parks are year-round resorts—at Banff, Jasper, Waterton Lakes and Mount Revelstoke Parks the skiing is excellent. Ski lifts and tows are in operation in Banff and Jasper Parks, and a chair lift on Mount Norquay and a sedan lift on Whitehorn Mountain, both in Banff, are added attractions. The chair lift on Mount Norquay and a gondola lift on Sulphur Mountain in Banff Park are operated for sightseeing purposes during the summer months. Of special interest to visitors is the Banff School of Fine Arts, where summer courses are conducted by the University of Alberta; also, the New Brunswick School of Arts and Crafts, operated by the provincial Department of Industry and Development, gives short courses in handicrafts to persons holidaying in Fundy Park.

A park warden service is supervised by the park superintendents to protect the forest and wildlife and to maintain constant vigilance for the safety and comfort of visitors. Angling opportunities in park waters are improved and extended by the stocking of game fish, a program assisted by the operation of fish hatcheries in three of the mountain National Parks. The Scientific Management of Game Fish in Canada's National Parks is the subject of a special article on pp. 35-39 of the 1956 Year Book. Two of the National Parks, Wood Buffalo and Elk Island, form sanctuaries for herds of buffalo and other forms of wild animal life.

In addition to the scenic, recreational and wild animal parks, Canada has 17 national historic parks. The National Parks Branch of the Department of Northern Affairs and National Resources is also responsible for the marking, preservation and restoration of places of great historic interest in Canada. More than 525 such sites have been marked on the recommendation of the Historic Sites and Monuments Board of Canada.

3.—Location, Year Established, Area and Characteristics of National Parks

Park	Location	Year Estab- lished	Area	Characteristics
			sq. miles	
Scenic, Recreational and Animal Parks				
Terra Nova.....	On Bonavista Bay, Newfoundland, 150 miles north of St. John's.	1957	156.0	Maritime area now under development; rocky headlands, wooded areas with abundant wildlife, off-shore and fresh-water fishing.
Prince Edward Island..	North shore of Prince Edward Island.	1937	7.0	Strip 25 miles long on shores of the Gulf of St. Lawrence. Recreational area, fine bathing beaches. Accessible by highway. Hotel and bungalow cabin accommodation. Equipped camp grounds.
Cape Breton Highlands.	Northern part of Cape Breton Island, N.S.	1936	367.0	Rugged Atlantic coast line with mountain background. Fine seascapes. Recreational opportunities. Hotel and bungalow cabin accommodation. Equipped camp grounds.
Fundy.....	On Bay of Fundy between Moncton and Saint John in New Brunswick.	1948	79.5	Delightful recreational area. Forested region, wildlife sanctuary, rugged terrain. Bungalow cabin accommodation. Equipped camp grounds.
Georgian Bay Islands..	In Georgian Bay, north of Midland, Ont.	1929	5.4	Recreational and camping area. Unique pillars on Flowerpot Island. Accessible by boat from nearby mainland points. Equipped camp grounds and annual youth camps on Beausoleil Island.

3.—Location, Year Established, Area and Characteristics of National Parks—continued

Park	Location	Year Estab- lished	Area sq. miles	Characteristics
Scenic, Recreational and Animal Parks —continued				
Point Pelee.....	On Lake Erie in south- western Ontario.	1918	6.0	Recreational area. Remarkable beaches, southern flora. Resting place for mi- gratory birds. Accessible by highway. Hotel and bungalow cabin accommoda- tion. Equipped camp grounds.
St. Lawrence Islands...	In St. Lawrence River be- tween Brockville and Kingston, Ont.	1914	172.0 (acres)	Mainland area and 12 islands among Thousand Islands. Recreational and camping area. Accessible by highway; by boat from nearby mainland points.
Riding Mountain.....	Southwestern Manitoba, west of Lake Winnipeg.	1929	1,148.0	Playground and wildlife sanctuary on summit of escarpment. Fine lakes. Accessible by highway. Hotel and bungalow cabin accommodation. Equip- ped camp grounds.
Prince Albert.....	Central Saskatchewan, north of Prince Albert.	1927	1,496.0	Forested region dotted with lakes and interlaced with streams. Summer play- ground and recreational area. Accessible by highway. Hotel and bungalow cabin accommodation. Equipped camp grounds.
Banff.....	Western Alberta, on east slope of Rockies.	1885	2,564.0	Magnificent scenic recreational area; noted resorts, Banff and Lake Louise. Mineral hot springs; summer and winter sports. Accessible by rail and highway. Hotel and bungalow cabin accommodation. Equipped camp grounds.
Elk Island.....	Central Alberta, near Ed- monton.	1913	75.0	Fenced preserve containing large herd of buffalo; also deer, elk and moose. Popular recreational area. Accessible by high- way. Bungalow cabin accommodation and equipped camp grounds.
Jasper.....	Western Alberta, on east slope of Rockies.	1907	4,200.0	Mountain playground and noted wildlife sanctuary. Majestic peaks, ice fields, beautiful lakes and famous resort, Jasper. Mineral hot springs, summer and winter sports. Accessible by rail and highway. Hotel and bungalow cabin accommoda- tion. Equipped camp grounds.
Waterton Lakes.....	Southern Alberta, adjoining Glacier Park in Mon- tana, U.S.A.	1895	203.0	Canadian section, Waterton-Glacier Inter- national Peace Park. Mountain play- ground with spectacular peaks and beautiful lakes. Accessible by highway. Hotel and bungalow cabin accommoda- tion. Equipped camp grounds.
Glacier.....	Southeastern British Col- umbia, on summit of the Selkirk Range.	1886	521.0	Superb alpine region, towering peaks, glaciers and forests. Accessible by rail only. Climbing, skiing, camping.
Kootenay.....	Southeastern British Col- umbia, on west slope of Rockies.	1920	543.0	Encompasses Vermilion-Sinclair section of Banff - Windermere Highway. Broad valleys, deep canyons, mineral hot springs. Hotel and bungalow cabin ac- commodation. Equipped camp grounds.
Mount Revelstoke....	Southeastern British Col- umbia, on west slope of Selkirks.	1914	100.0	Rolling mountain-top plateau. Colourful alpine meadows. Accessible by rail and highway. Summer accommodation in Park; all-year accommodation in town of Revelstoke. Championship ski runs and ski jump. Equipped camp grounds.

3.—Location, Year Established, Area and Characteristics of National Parks—concluded

Park	Location	Year Estab- lished	Area	Characteristics
			sq. miles	
Scenic, Recreational and Animal Parks —concluded				
Yoho.....	Eastern British Columbia, on west slope of Rockies.	1886	507.0	Lofty peaks, magnificent waterfalls, colourful lakes. Yoho and Kicking Horse Valleys. Accessible by rail and highway. Hotel and bungalow cabin accommodation. Equipped camp grounds.
Wood Buffalo ¹	Partly in Alberta and partly in Northwest Territories, between Athabasca and Slave Rivers.	1922	17,300.0	Immense region of forests and open plains. Home of largest remaining herd of bison on the Continent. Other wildlife abundant.
Historic Parks			acres	
Signal Hill.....	St. John's, Nfld.....	1958	243.4	Location of military installations and site of operations and battles in 1700's. Cabot Tower.
Fort Anne.....	Nova Scotia, at Annapolis Royal.	1917	31.0	Site of early Acadian settlement. Museum and well-preserved earthworks.
Fortress of Louisbourg.	Cape Breton Island, N.S., 25 miles from Sydney.	1941	339.5	Ruins of walled city erected by the French, 1713-58. Interesting excavations. Museum.
Halifax Citadel.....	Halifax, N.S.....	1956	36.9	Defence post constructed 1828-35. Museums.
Port Royal.....	Port Royal, N.S., 8 miles from Annapolis Royal.	1941	20.5	Restoration of "Habitation"—first fort built in 1605 by Champlain and DeMonts.
Alexander Graham Bell	Baddeck, N.S.....	1955	14.0	Museum contains mechanical and documentary records of research by the inventor.
Grand Pré.....	Grand Pré, N.S.....	1957	14.0	Commemorates the story of the Acadians.
Fort Beauséjour.....	New Brunswick, near Sackville.	1926	81.3	Site of French fort erected in middle of 18th century. Museum.
Fort Chambly.....	Chambly, Que.....	1941	2.5	Original French fort built on Richelieu River in 1665 was burned. Present fort built by English in 1709-11. Museum.
Fort Lennox.....	Île aux Noix, Que., near St. Johns.	1941	210.0	Original fort, Île aux Noix, built by French in 1759. Fort Lennox built by English in 1820's.
Fort Malden.....	Amherstburg, Ont.....	1941	8.0	Site of defence post built 1797-99. Museums.
Fort Wellington.....	Prescott, Ont.....	1941	8.5	Defence post built 1812-13. Museum.
Woodside.....	Kitchener, Ont.....	1954	12.0	Boyhood home of the Rt. Hon. William Lyon Mackenzie King, former Prime Minister of Canada.
Fort Prince of Wales....	Northern Manitoba, near Churchill.	1941	50.0	Ruins of fort built 1733-71 to secure control of Hudson Bay for England.
Lower Fort Garry	Manitoba, 20 miles north of Winnipeg.	1951	13.0	Stone-walled fort built by the Hudson's Bay Company between 1831 and 1839.
Fort Battleford.....	Saskatchewan, 4 miles south of North Battleford.	1951	36.7	North West Mounted Police post built in 1876.
Fort Langley.....	Fort Langley, B.C.....	1958	9.0	Present fort built in 1840. First permanent British settlement in British Columbia. Museum.

¹ Administered by the Northern Administration Branch, Department of Northern Affairs and National Resources.

Provincial Parks.—In addition to the National Parks described above, most of the provincial governments have established parks within their boundaries. These parks, in the same way as the National Parks, are areas of scenic or other interest, preserved and maintained for the benefit of the public although many of them are still undeveloped. A detailed list of Provincial Parks, showing location, year established, area, and a short description of each, is given in the 1954 Year Book, pp. 26-30. The more important parks in each province are mentioned briefly here.

Newfoundland.—There are 55 sq. miles of provincial parkland in Newfoundland—a 42-sq. mile area on the west coast established as Serpentine Park is undeveloped; Sir Richard Squires Memorial Park on the Upper Humber River and Butter Pot Park on the Avalon Peninsula are under development. Surveys are being conducted with a view to setting aside about 400 acres of Crown lands throughout the province to be used as picnic and camp sites, ranging in size from one-half-acre to 50-acre lots.

Prince Edward Island.—Three properties consisting of 150 acres have been developed as provincial parks: Strathgartney Park, a 40-acre tract of land at Churchill on the Trans-Canada Highway between Charlottetown and Borden, is an excellent picnic and camp site with attractive hardwood groves, fresh spring water and a beautiful view over West River and the surrounding country; Lord Selkirk Park at Eldon has an area of 30 acres and is of historic interest in that it contains an old French cemetery and marks the spot on the shoreline where Lord Selkirk landed; Brudenell River Park at Roseneath along the shore of the Brudenell River comprises 80 acres, much of it woodland. These newly established parks are maintained by the Department of Industry and Natural Resources and meet a long-standing need for public picnic grounds and camp sites. Another 200-acre tract, to be known as Sir Andrew MacPhail's Park, is under development.

Nova Scotia.—The Provincial Department of Lands and Forests has recently announced the formation of a new Parks Division in Nova Scotia. Plans are currently being made to increase the number of provincial parks with adequate facilities for visitors who wish to picnic or to camp overnight. These parks will be located at naturally scenic spots on or close to well-travelled highways throughout the province. Several privately owned areas have been offered for this purpose and provincial personnel are assessing the possibility of others so that development plans may be drawn up.

The Provincial Wildlife Park at Shubenacadie is operated by the Department of Lands and Forests. It is a 30-acre tract of land maintained in its natural state as far as possible consistent with providing housing for the animals and birds that are its main attraction. Such facilities permit the park's annual attendance of some 200,000 visitors to see wildlife at close range. Expansion is planned as more varieties of birds and animals become available and can be absorbed.

Quebec.—The Province of Quebec has established six provincial parks and seven Fish and Game Reserves. Five of the park areas are quite extensive. Saguenay Park, on the north shore of the St. Lawrence River in Saguenay County, has an area of 21,000 sq. miles; La Vérendrye Park, 140 miles northwest of Montreal, has an area of 4,746 sq. miles; Laurentide Park, 30 miles north of Quebec City, is 3,612 sq. miles in extent; Mont Tremblant, 80 miles north of Montreal, 1,223 sq. miles; and Gaspesian Park, Gaspé Peninsula, 514 sq. miles. Mount Orford Park, situated 15 miles west of Sherbrooke, has an area of 15 sq. miles.

The Fish and Game Reserves together occupy more than 10,000 sq. miles. The Chibougamau Reserve and the Mistassini Reserve, both northwest of Lake St. John, cover 3,400 sq. miles and 5,200 sq. miles, respectively. Smaller reserves are the Kipawa Reserve in the Témiscamingue district, the Shickshock Reserve adjoining Gaspesian Park, and the Petite Cascapédia and the Port Daniel, reserved for salmon and trout fishing, both of which lie along the Bay of Chaleur in Gaspé Peninsula.

These parks and reserves are wilderness areas of great scenic interest—for the most part mountainous country threaded with many rivers, lakes and streams and abounding in wildlife. In all of them, except Mount Orford, excellent fishing may be found and most of them have been organized to accommodate sportsmen and tourists in camps, cottages and lodges. Mont Tremblant is a famous resort area in both summer and winter and is easily reached by highway from Montreal. The Department of Game and Fisheries administers the parks and reserves, and also six salmon streams which are open to anglers.

Ontario.—The provincial park program in Ontario has been greatly expanded since 1955. In 1959 the provincial parks system provided supervised camping and picnicking privileges in 57 parks for which a nominal charge was made, and also supervised privileges in 25 park areas undergoing primary stages of development. In addition to these established parks, other areas are in process of acquisition, reserved for future development, or being investigated. The four largest parks—Algonquin, Quetico, Superior and Sibley—together have an area of nearly 4,700 sq. miles. Algonquin, 141 miles north of Toronto and 105 miles west of Ottawa, was the first to be established and is the best known. It is well provided with commercial camps for children and adults and is easily accessible by road. However, the present administrative policy is to encourage the establishment of commercial recreation facilities on the park fringes and to return the park itself to its natural condition. The interiors of Quetico and Superior Parks are also being retained as wilderness areas with fringe development. Quetico Park is accessible by road through the recently developed French Lake camp site, and by water; an extension to Highway No. 17 northward from Sault Ste. Marie will give access to Superior Park; and Sibley Park may be reached by road from Highway No. 17 eastward from Port Arthur.

The parks are administered by the Parks Division of the Department of Lands and Forests, Toronto, from which detailed information is available in brochure form.

Manitoba.—There are ten forest reserves in Manitoba with a total area of 5,386 sq. miles, which are used to a certain extent as recreational areas. Recently, 21 new areas totalling 968 sq. miles in extent have been established as parks and recreational areas.

Saskatchewan.—Saskatchewan has ten provincial parks with a total area of about 2,310 sq. miles. Cypress Hills, Duck Mountain, Greenwater Lake, Moose Mountain, and Valley Centre are operated as summer resorts with chalet, lodge, cabin and trailer accommodation, and camping and picnic facilities. Recreational activities include fishing, boating, swimming, golf, tennis, dancing, baseball, hiking, horseback riding, etc., and the parks are all well fitted with playground and beach equipment for children. In Cypress Hills Park, elk, antelope, deer and beaver are plentiful and brook and other trout abound in the streams and lakes. Heavy stands of tall, straight lodgepole pine provide forest cover in this area. In Duck Mountain, Moose Mountain and Greenwater Lake Parks, moose, elk, deer, bear and beaver are common as well as several varieties of grouse. Spruce, poplar and white birch provide excellent cover for wildlife. Pickerel, pike and perch are prevalent in the lakes.

Alberta.—In Alberta 40 provincial parks have been established with a total area of approximately 138 sq. miles; 34 of these parks are presently under development. The Cypress Hills Provincial Park, covering an area of over 77 sq. miles, is the largest and is situated in the southeast portion of the province. The other parks under development are: Aspen Beach, Beauvais Lake, Big Hill Springs, Bow Valley, Crimson Lake, Cross Lake, Dillberry Lake, Entrance, Garner Lake, Gooseberry Lake, Kinbrook Island, Lac Cardinal, Little Bow, Little Fish Lake, Long Lake, Ma-Me-O Beach, Miquelon Lake, Moonshine Lake, O'Brien, Park Lake, Pembina River, Red Lodge, Rochon Sands, Saskatoon Island,

Steveville Dinosaur, Sylvan Lake, Taber, Thunder, Vermilion, Wabamun Lake, Willow Creek, Winagami Beach, Woolford, and Writing-on-Stone. Picnic facilities, playground equipment and camping areas are provided in these parks, which are maintained primarily for the recreation and enjoyment of the residents of the province.

British Columbia.—There are 146 provincial parks in British Columbia with a total area of about 13,158 sq. miles. These parks are classified as A, B and C. Class A parks are those considered most highly for immediate recreational development and are strongly protected. Class B parks are areas slated for development—valuable wilderness areas or places set aside for a specific reason. Class C parks are intended primarily for the use of local residents and are usually under Board management. The parks are in all stages of development and dedicated to a variety of recreational uses. There are immense wilderness areas such as Tweedsmuir and Wells Gray Parks and outstanding scenic and mountain places which include Garibaldi, Mount Robson and E. C. Manning Parks. Thousands of city dwellers throng to the ski slopes of Mount Seymour or picnic at Cultus Lake Park. The formal gardens of Peace Arch are a monument to the goodwill between Canada and the United States. Vancouver Island has a chain of small forest parks that have achieved a tremendous popularity with tourists—the best known are Little Qualicum Falls and Miracle Beach. In addition there is a camp-site system closely integrated with the provincial parks, many camp sites actually being located in the parks. The famous gold town of Barkerville has become the first Provincial Historical Park. A new venture is the establishment of a Marine Park System. There are now three Marine Parks, all with water access.

Subsection 4.—The National Capital Plan*

Ottawa, the city selected by Queen Victoria in 1857 to be the permanent seat of the legislature of the united provinces of Upper and Lower Canada, was designated the National Capital of the Dominion upon Confederation in 1867. The community grew out of the military and construction camp which served as headquarters for the building of the Rideau Canal—a military project carried out between 1826 and 1832 which utilized the Rideau and Cataraqui Rivers to link Kingston on the St. Lawrence River and Lake Ontario with the Ottawa River thus providing a safe interior military waterway between Lake Ontario and Montreal by bypassing the vulnerable international section of the St. Lawrence River. Originally known as Bytown, after Col. John By, R.E., builder of the canal, the settlement prospered with the development of the lumber trade. The Act of Incorporation, changing Bytown to the City of Ottawa, was proclaimed on Jan. 1, 1855.

The city, situated in an area of great natural beauty, has remained a self-governing municipality and, although throughout the years the Federal Government co-operated with the municipal authorities in the development of a system of driveways and parks, the city expanded without the benefit of any planned direction. In 1946, however, a Master Plan was approved, designed to guide the development of the Capital's urban area over the following half-century and to protect the beauty of the surrounding National Capital District. That District covers an area of about 1,800 sq. miles, half of which lies in the Province of Ontario and half in the Province of Quebec. The co-operation of the Cities of Ottawa and Hull, sixty-two other autonomous municipalities and the two provincial governments is essential to the successful implementation of the Plan. The federal agency responsible for its fulfilment is the National Capital Commission (see p. 139), the lineal descendant of the Federal District Commission which, in turn, replaced the

* Prepared by Peter Aykroyd, Director of Information, National Capital Commission.

Ottawa Improvement Commission. The National Capital Commission is served by a full-time paid chairman and 19 unpaid commissioners representative of every province of Canada. The staff, operating under a general manager, numbers 550.

The major projects under the Master Plan have all been commenced during the past decade. They are concerned with the development of open space, the relocation of railways, the decentralization of government buildings, the provision of a green belt and the development of Gatineau Park.

By the end of 1959, over 4,000 acres of open space had been added to the urban area by the acquisition of land along both shores of the Ottawa River and by the provision of exceptionally wide rights-of-way for parkways throughout Ottawa and to a lesser extent in Hull. In co-operation with the Canadian National Railway System and the Canadian Pacific Railway, the task of removing, by stages, most of the rail lines from the centre of the metropolitan area continues. The program, scheduled for completion by 1965, involves the elimination of 19 miles of track and 27 level crossings together with the acquisition of 449 acres of land for redevelopment. New freight express and passenger terminals will eventually be constructed several miles from the city centre. Toward implementing the plan of decentralizing government services, four large areas have been established for new buildings, well away from central Ottawa—the Montreal Road area, Rideau Heights, Pinecrest and Tunney's Pasture. The Plan calls for the establishment of a green belt about two and a half miles wide to surround the urban zone at an average distance of nine miles from the city centre, requiring the acquisition of about 37,000 acres of land. By the end of 1959, \$20,000,000 had been expended on green-belt purchase and by the end of March 1961 most of the land should be under Commission ownership.

The development of Gatineau Park, a wilderness area triangular in shape with its apex in the heart of Hull and stretching 35 miles northwest into the Laurentian Hills, has proceeded rapidly. By the end of March 1961, 60,000 of the projected 75,000 acres for park use will have been acquired. The Park is now traversed by a scenic parkway which will be extended gradually. Altogether the Commission has completed 26 miles of parkway in Ottawa and 15 miles in Hull and its environs. Another 40 miles are projected. The Commission maintains the grounds of 125 government buildings in the National Capital region and gives assistance to municipal projects that enhance the attractiveness of the area, such as the provision of land and landscaping for the 12-mile Queensway under construction through Ottawa. Planning advice is also offered to other municipalities in the National Capital region.

An Advisory Committee on Design passes on the siting and exterior appearance of all Federal Government buildings in the region and a Historical Advisory Committee advises on the marking and preserving of historic sites.

Estimated expenditure on Commission projects for the year ending Mar. 31, 1961 totals \$17,000,000—\$2,000,000 for administration, operation and maintenance, \$4,000,000 for construction and \$11,000,000 for property acquisition.

Section 3.—Wildlife Resources and Conservation

A series of special articles relating to the wildlife resources of Canada has been carried in previous editions of the Year Book. Articles on Migratory Bird Protection in Canada, Game Fish in Canada's National Parks, The Barren-Ground Caribou, Migratory Bird Legislation, Scientific Management of Game Fish in Canada's National Parks, and The Musk-ox were carried in the 1951, 1952-53, 1954, 1955, 1956 and 1957-58 editions, respectively. A short article on the fur industry appears in the 1959 edition at pp. 603-604.

The Canadian Wildlife Service.*—The Canadian Wildlife Service deals with most wildlife problems coming within the jurisdiction of the Federal Government. The Service was organized in 1947 to meet the growing need for scientific research in wildlife management and is a division of the National Parks Branch, Department of Northern Affairs and National Resources. Its functions include the administration of the Migratory Birds Convention Act in conjunction with the Royal Canadian Mounted Police and in co-operation with the provincial game authorities. It conducts scientific research into wildlife problems in the Northwest Territories, Yukon Territory, and the National Parks of Canada, advises the administrative agencies concerned on wildlife management and co-operates in the application of such advice. It provides co-ordination and advice in connection with the administration of the Game Export Act in the provinces, deals with national and international problems relating to Canada's wildlife resources, and co-operates with other agencies having similar interests and problems in Canada and elsewhere.

The Migratory Birds Convention Act was passed in 1917 to give effect to the Migratory Birds Treaty signed at Washington in 1916. It provides a measure of protection for numerous species of birds that migrate between the two countries. The Canadian Wildlife Service is the federal agency responsible for administration of the Act and for the annual revision of the Migratory Bird Regulations, which govern such matters as open seasons and other waterfowl hunting details, taking and possession of migratory birds for scientific or propagating purposes, eiderdown collecting, etc. The Royal Canadian Mounted Police is responsible for enforcing the Act and Regulations. In both administration and enforcement, provincial authorities co-operate with the Canadian Wildlife Service.

There are 98 migratory bird sanctuaries in Canada with a total area of more than 6,000 sq. miles. A sanctuary may be established on the initiative of the Department or of a provincial or municipal government, or on petition by a private person or organization. Bird banding provides valuable information on the migration of birds and their natural history and is especially useful in waterfowl management. Serially numbered bands supplied by the United States Bureau of Sport Fisheries and Wildlife are used in Canada as well as in the United States.

Investigations of barren-ground caribou in the Northwest Territories and Yukon Territory have continued since 1948. The herds that migrate into parts of the Prairie Provinces adjacent to the Territories have been the object of co-operative studies by the federal and provincial governments. These studies have designated causes for the disastrous decline in caribou numbers, with human utilization heading the list of mortality factors. Predator control and conservation education have been intensified and more stringent hunting regulations are being enforced as a means of mitigating the situation.

Other recent and current projects of the Service include long-term studies of the muskrat of the Mackenzie Delta, beaver in Mackenzie District, white fox in the Eastern Arctic and musk-oxen on the Arctic islands. The large herds of bison in Wood Buffalo National Park have been studied to determine the effects of disease on their health and growth. Biologists of the Service make detailed studies of birds and mammals in the National Parks and advise the National Parks Service, on the basis of the scientific information obtained, concerning the management of these national resources. Damage to cereal crops by wild ducks and cranes has received intensive study. Murres, sea birds of importance to many inhabitants of Newfoundland, were investigated to determine the effects of human activity on their numbers. Much time has been devoted to other species greatly reduced in number or in danger of extinction such as Ross's geese, trumpeter swans and whooping cranes.

* Prepared by the Canadian Wildlife Service, Department of Northern Affairs and National Resources, Ottawa.

The present research staff includes 39 university-trained wildlife biologists stationed at various centres throughout Canada. Ornithologists are located at Vancouver, Edmonton, Saskatoon, Winnipeg, Ottawa, Maple, Ont., Quebec City, Sackville, N.B., and St. John's, Nfld. Mammalogists are stationed in the Northwest Territories at Yellowknife, Fort Smith and Aklavik, at Whitehorse in the Yukon Territory and at Edmonton and Ottawa. Two limnologists are located at Edmonton and a range specialist and a pathologist at Edmonton and Ottawa, respectively. A number of university graduates and undergraduates are engaged annually to assist in summer field work. The Ottawa headquarters includes an administrative staff of about 30 in addition to supervisory research officers. About 25 part-time migratory bird wardens and sanctuary caretakers are employed.

PART IV.—CLIMATE AND TIME ZONES

Section 1.—Climate

The 1959 Year Book carried at pp. 23-51 a comprehensive study on The Climate of Canada, specially prepared by the Meteorological Branch of the Department of Transport. Because of space limitations it was not possible to include in that edition the detailed tabulations of climatic factors for individual meteorological stations. Such tables for 45 stations across Canada are carried on the following pages and a separate reprint is available containing complete textual and tabular data.*

CLIMATIC TABLES

The following tables contain climatic data from a selection of 45 Meteorological Observing Stations throughout Canada. They consist primarily of monthly temperature and precipitation data along with supplementary data on humidity, wind, sunshine, etc. The information listed is intended to give the reader a general knowledge of the basic climatic features of the different sections of the country. Tables are shown for many of the well-known populous cities and also for locations that are representative of large, sparsely populated areas.

Air Temperature.—To obtain representative observations, all temperature stations are equipped with standard shelters in which the thermometers are housed. The thermometers are self-registering mercury maximum and spirit minimum thermometers which are read usually two or four times daily. The shelter is located in the best representative location possible and is installed over level grassy terrain in a spot well away from the sheltering influence of trees and buildings. The thermometers in the shelter are fixed so that the bulbs are approximately four feet above the surface of the ground.

The mean air temperature data have been derived mainly from records for the thirty-year period 1921-50 except for the far northern stations where only shorter records are available. The mean daily maximum temperature for any month is the mean of all the daily maximum temperatures recorded in that particular month for the period of record used. The mean daily minimum temperature is similarly derived from all daily minimum temperature observations. The mean daily temperature is the average of the mean daily maximum and mean daily minimum temperatures. The mean monthly maximum temperature for January is the average of the highest temperature in each January for the period of record and similarly the mean monthly minimum is the average of the lowest temperature for each January. The "highest recorded" and "lowest recorded" temperatures refer to the absolute extremes for the entire period of observations at each station.

Heating Factor.—The degree-day is a unit based upon temperature difference and time, used mainly in estimating fuel consumption and determining the heating load of a building in winter. For any day when the mean temperature is less than 65°F. there are as many degree-days as there are Fahrenheit degrees difference in temperature between 65°F. and the mean temperature for the day. The total degree-days for the month is the sum of the daily deficits of outside temperature below 65°F.

* Reprint *The Climate of Canada* available from the Meteorological Branch, Department of Transport, Toronto, Ontario.

Relative Humidity.—For every temperature there is a maximum amount of water vapour which can exist in a given volume of air. In general, the existing amount of water vapour in a space is less than the maximum possible amount. The relative humidity (per cent) is the percentage of the maximum that is actually present in the air at the time of the observation. Humidity data are obtained regularly from the readings of dry- and wet-bulb thermometers which are housed in the thermometer shelter. The dry- and wet-bulb thermometers are usually artificially ventilated. When the dry-bulb temperature and the difference between the dry- and wet-bulbs are known the relative humidity may be obtained from tables. The relative humidity is ordinarily least in the early afternoon and greatest about dawn. Mean values are given in the tables for six-hour intervals for the ten-year period 1941 to 1950 at most stations.

Precipitation.—The official Canadian rain gauge is a small cylinder with a cross-sectional area of 10 square inches. The gauge is placed in such a position that it is free from all obstructions which might interfere with the catch. The rim of the gauge is one foot above the level ground. The rain is caught in the gauge and is then measured to one-hundredth of an inch with a simple measuring device. The total rainfall for any month is the accumulated total of the daily rainfall amounts. To obtain the mean values of the total rainfall for a certain number of years for any month, the monthly values are added and averaged.

In Canada, freshly fallen snow is measured directly in inches and tenths as it lies on the ground. Observations are made as representative as possible by averaging several measurements and by avoiding snow drifts and wind-swept bare spots. The daily totals of freshly fallen snow are added to give the total snowfall for any month and these monthly totals are averaged for the period of record to give the mean monthly amount.

It has been found that the depth of water obtained from melting newly fallen snow is, on the average, one-tenth of the depth of the snow. Thus, the total precipitation for any month is obtained by adding together the total rainfall and one-tenth of the depth of newly fallen snow. A day with rain is, for the purpose of these tables, one on which one-hundredth of an inch or more has fallen, and a day with snow is one with at least one-tenth of an inch of newly fallen snow.

Other Meteorological Parameters.—Wind data have been obtained from three-cup anemometers with continuously recording anemographs or from hourly observations made from dial-type recorders. The most prevalent direction and average wind speed have been derived from these hourly wind data.

The Campbell-Stokes sunshine recorder is used to measure bright sunshine. With this instrument the bright sunshine is focussed sharply on a card and leaves a burn for the portion of the day during which the sun is shining. Daily and monthly totals of bright sunshine are so obtained and the mean for any particular month is obtained by averaging the individual monthly values.

The average number of days in each month when "thunder" has been heard at least once in the twenty-four hours is listed.

The average number of days each month on which the minimum temperature in the thermometer shelter falls to 32°F. or lower is listed under the heading "freezing temperatures".

For the purpose of these summaries, a frost is said to occur if the minimum thermometer in the thermometer shelter falls to 32°F. or lower. Average dates are given for the last spring frost and first fall frost. The period between these two dates is the average length of the frost-free season.

Symbols.—The interpretation of the symbols used in the climatic tables is as follows:—

... indicates that figures are not appropriate or not applicable.

T indicates a trace of precipitation; in the case of rain or total precipitation, T indicates an average less than 0.005 inch while for snow T indicates an average less than 0.05 inch.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations

NOTE.—For full explanation of terms used and observing methods see pp. 31-32. Blanks have been left throughout these tables where information is missing or where reliable data are not available owing to a short period of record.

GANDER, Nfld.¹—48°57'N, 54°34'W.

ALTITUDE ABOVE MEAN SEA LEVEL: 482 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0300 N.S.T.	0900 N.S.T.	1500 N.S.T.	2100 N.S.T.
		Maximum	Minimum	Maximum	Minimum	Highest Re-recorded	Lowest Re-recorded					
°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.	
Jan....	18.6	25.7	11.5	43	-6	53	-13	1,430	90	90	80	87
Feb....	17.0	24.6	9.4	42	-7	55	-15	1,320	91	91	82	90
Mar....	24.5	31.8	17.2	45	1	56	-14	1,270	88	86	72	84
Apr....	33.3	40.0	26.6	56	13	71	4	970	87	82	70	82
May....	43.6	52.7	34.5	71	25	78	22	650	89	79	62	80
June....	51.9	61.7	42.1	82	33	91	28	380	88	79	58	75
July....	61.6	71.5	51.7	86	40	96	36	130	88	78	59	77
Aug....	60.9	68.8	53.0	84	41	89	30	160	89	81	62	82
Sept....	53.4	61.4	45.4	78	34	84	31	320	90	85	64	86
Oct....	43.7	50.9	36.5	67	26	76	22	660	89	87	71	86
Nov....	34.2	40.0	28.4	58	15	67	6	920	90	89	79	88
Dec....	24.5	30.3	18.7	47	4	55	-5	1,230	89	89	82	88
Year...	38.9	46.6	31.3	88	-10	96	-15	9,440	...	...	...	...
	PRECIPITATION						WIND		BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ²	
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
in.	No.	in.	No.	in.	in.							
Jan....	0.61	4	20.2	15	2.63	1.25	W	27	16.5	71	0	31
Feb....	0.82	6	24.6	16	3.28	1.24	W	22	16.1	82	0	28
Mar....	0.99	5	18.0	14	2.79	1.70	W	20	15.4	111	³	30
Apr....	1.27	8	13.0	11	2.57	2.57	W	18	14.2	117	³	26
May....	2.14	13	4.2	4	2.56	1.54	SW	17	13.1	145	³	13
June....	2.66	13	1.3	1	2.79	1.46	SW	21	13.1	154	1	1
July....	3.61	13	0	0	3.61	3.79	SW	32	11.5	192	2	0
Aug....	3.59	15	0	0	3.59	3.87	SW	29	11.6	179	2	0
Sept....	3.64	15	0.2	³	3.66	2.25	SW	26	13.0	134	³	³
Oct....	3.74	16	3.5	4	4.09	1.97	SW	25	14.2	110	³	9
Nov....	3.23	13	9.8	8	4.21	2.29	W	22	14.3	62	0	22
Dec....	1.28	6	24.4	15	3.72	1.80	W	26	15.3	56	0	30
Year...	27.58	127	119.2	88	39.50	3.87	SW, W ⁴	21	14.0	1,413	5	190

¹ Airport data.
than 0.5 days.

² Average date of last Spring frost June 1; of first Fall frost Oct. 3.

⁴ Two directions of equal prevalence.

³ Average less

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

GOOSE BAY, Nfld.¹—53°19'N, 60°23'W.

ALTITUDE ABOVE M.S.L.: 144 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0200 A.S.T.	0800 A.S.T.	1400 A.S.T.	2000 A.S.T.
		Maximum	Minimum	Maximum	Minimum	Highest Recorded	Lowest Recorded					
°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.	
Jan.....	-0.8	7.3	-8.9	36	-27	46	-38	2,020	84	85	80	84
Feb.....	3.2	12.5	-6.1	36	-25	51	-35	1,710	86	87	76	81
Mar.....	16.1	25.6	6.6	45	-18	54	-32	1,530	80	80	64	71
Apr.....	27.2	35.9	18.5	57	0	62	-14	1,110	78	73	57	73
May.....	40.0	48.5	31.5	71	17	89	10	770	76	68	55	64
June....	50.3	59.8	40.8	84	31	93	28	410	79	70	52	63
July....	60.5	70.0	51.0	90	41	100	38	130	82	71	54	63
Aug.....	57.9	66.8	49.0	84	37	91	32	220	81	75	55	68
Sept....	49.2	57.4	41.0	77	29	84	20	440	79	77	58	70
Oct.....	37.1	43.8	30.4	66	18	73	11	840	78	79	63	77
Nov.....	22.7	29.3	16.1	49	-1	58	-9	1,220	83	84	71	80
Dec.....	8.5	15.8	1.2	38	-20	53	-33	1,740	86	88	82	86
Year...	31.0	39.4	22.6	90	-31	100	-38	12,140	...	...	...	...
	PRECIPITATION						WIND		BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ¹	
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in.	No.	in.	No.	in.	in.						
Jan.....	0.07	1	18.6	15	1.93	1.19	W	40	10.7	93	0	31
Feb.....	0.10	2	22.6	15	2.36	1.56	W	30	9.7	114	0	28
Mar.....	0.04	1	23.8	13	2.42	1.46	W	27	10.1	144	0	31
Apr.....	0.31	3	14.5	10	1.76	0.95	NE	26	9.9	134	0	28
May.....	1.31	10	7.6	6	2.07	1.33	NE	24	9.3	177	0	17
June....	2.50	14	T	3	2.50	1.15	NE	25	8.7	184	1	2
July....	3.28	15	0	0	3.28	1.38	SW	20	8.4	194	3	0
Aug.....	2.71	14	0	0	2.71	2.58	SW,W ⁴	20	8.4	187	2	3
Sept....	2.13	12	0.9	1	2.22	1.70	W	24	9.3	124	3	4
Oct.....	1.49	8	9.3	5	2.42	1.19	W	26	10.0	85	3	18
Nov.....	0.58	5	19.2	10	2.50	1.60	W	33	9.4	69	0	28
Dec....	0.05	1	24.4	14	2.49	1.26	W	38	9.8	65	0	31
Year...	14.57	86	110.9	89	28.66	2.58	W	25	9.5	1,570	6	218

¹ Airport data. less than 0.5 days.

² Average date of last Spring frost June 10; of first Fall frost Sept. 14.

⁴ Two directions of equal prevalence.

³ Average

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

ST. JOHN'S, NFLD.¹—47°32'N, 52°44'W.

ALTITUDE ABOVE M.S.L.: 211 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0300 N.S.T.	0900 N.S.T.	1500 N.S.T.	2100 N.S.T.
		Maximum	Minimum	Maximum	Minimum	Highest Recorded	Lowest Recorded					
°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.	
Jan.....	24.0	29.8	18.1	45	2	59	-19	1,270	90	88	85	88
Feb.....	21.6	27.6	15.5	43	0	57	-21	1,180	92	91	88	90
Mar.....	27.5	33.3	21.7	48	7	67	-14	1,170	92	88	81	89
Apr.....	34.8	40.7	29.0	57	20	72	-1	920	91	86	79	90
May.....	43.0	50.6	35.4	68	27	81	20	700	93	81	70	89
June....	52.4	61.0	43.8	78	34	87	27	460	92	79	69	85
July.....	60.0	68.8	51.2	80	42	90	33	190	94	84	72	90
Aug.....	60.7	67.9	53.5	80	45	93	32	170	95	85	73	94
Sept.....	54.4	61.4	47.4	73	37	84	29	320	94	86	75	92
Oct.....	46.4	53.1	39.8	69	29	87	22	610	92	87	77	89
Nov.....	37.6	43.1	32.1	59	19	68	6	820	92	91	85	91
Dec.....	29.5	34.6	24.4	51	11	60	-4	1,130	90	89	85	90
Year...	41.0	47.7	34.3	83	-3	93	-21	8,940	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUNSHINE	THUNDER	FREEZING TEMPERATURES ²
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
in.	No.	in.	No.	in.	in.							
Jan.....	2.40	9	29.1	15	5.31	2.83	W	36	18.3	66	0	31
Feb.....	2.39	6	27.4	16	5.13	2.15	W	27	17.3	80	3	28
Mar.....	2.72	9	19.2	12	4.64	2.36	W	28	17.3	97	3	30
Apr.....	3.14	14	6.3	5	3.77	3.14	W	20	15.1	101	3	26
May.....	3.66	14	1.9	2	3.85	1.95	SW	20	14.5	166	3	13
June....	3.13	14	T	3	3.13	2.29	SW,W ⁴	22	14.3	173	1	2
July.....	3.14	11	0	0	3.14	1.62	SW	31	13.8	232	2	0
Aug.....	3.97	13	0	0	3.97	2.87	SW	30	13.5	181	1	0
Sept.....	3.73	14	0	0	3.73	2.55	W	26	14.7	151	1	3
Oct.....	4.72	17	0.4	3	4.76	4.37	W	27	16.7	108	3	5
Nov.....	5.23	16	4.8	5	5.71	2.80	W	23	16.1	58	0	16
Dec.....	3.45	12	25.0	13	5.95	3.61	W	32	17.2	51	0	28
Year...	41.68	149	114.1	68	53.09	4.37	W	26	15.7	1,464	5	179

¹ City data; except heating factor, humidity, wind and thunder data from Torbay airport.
date of last Spring frost June 2; of first Fall frost Oct. 10.

² Average less than 0.5 days.

³ Average

⁴ Two directions of equal prevalence.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

Note.—For full explanation of terms used and observing methods see pp. 31-32.

CHARLOTTETOWN, P.E.I.¹—46°14'N, 63°07'W.

ALTITUDE ABOVE M.S.L.: 74 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY				
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0200 A.S.T.	0800 A.S.T.	1400 A.S.T.	2000 A.S.T.	
		Maximum	Minimum	Maximum	Minimum	Highest Recorded	Lowest Recorded						
°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.		
Jan.	18.8	26.4	11.2	45	—8	53	—27	1,460	81	90	87	88	
Feb.	17.6	25.3	10.0	43	—8	53	—23	1,370	88	88	86	86	
Mar.	26.9	33.7	20.1	49	1	60	—17	1,220	84	82	76	81	
Apr.	37.0	43.8	30.2	62	19	80	2	870	85	81	69	81	
May.	48.6	57.1	40.2	74	30	84	22	560	86	78	65	79	
June.	58.4	66.6	50.2	82	39	88	32	250	89	81	69	80	
July.	66.6	74.4	58.8	84	50	92	37	60	90	83	69	84	
Aug.	65.9	73.6	58.2	84	48	98	40	70	90	83	68	81	
Sept.	58.4	65.5	51.4	79	39	88	32	240	89	82	69	84	
Oct.	48.4	55.0	41.9	70	29	82	23	550	88	84	73	84	
Nov.	37.7	43.4	32.0	59	18	67	1	850	89	90	80	88	
Dec.	25.2	31.2	19.3	49	2	61	—18	1,210	86	88	83	88	
Year ...	42.5	49.7	35.3	86	—11	98	—27	8,710	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ²	
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days	
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage					
	in.	No.	in.	No.	in.	in.							
Jan.	1.31	4	27.8	11	4.09	1.67	W	30	13.4	89	0	31	
Feb.	0.73	3	26.3	11	3.36	1.92	W	22	13.3	111	0	28	
Mar.	1.63	6	16.7	8	3.30	1.40	W	19	12.8	140	0	28	
Apr.	2.04	10	7.9	4	2.83	1.57	N,NW ³	17	12.3	156	4	20	
May.	3.10	13	0.4	4	3.14	2.02	N	16	11.0	212	1	3	
June.	2.97	13	0	0	2.97	1.98	S	21	10.0	221	1	4	
July.	2.85	10	0	0	2.85	2.11	S	29	9.8	244	2	0	
Aug.	3.48	11	0	0	3.48	2.91	SW	25	9.7	236	2	0	
Sept.	4.12	13	0	0	4.12	6.45	SW	22	11.0	177	1	4	
Oct.	4.11	12	0.6	1	4.17	2.13	SW	20	12.1	134	4	2	
Nov.	3.52	13	6.4	3	4.16	2.34	W	25	13.1	78	4	14	
Dec.	2.00	7	26.6	10	4.66	2.30	W	34	14.1	59	0	28	
Year ...	31.86	115	112.7	48	43.13	6.45	SW	18	11.9	1,857	7	154	

¹ Experimental Farm data; except heating factor and humidity data from airport.
last Spring frost May 16; of first Fall frost Oct. 14.
less than 0.5 days.

² Average date of
³ Two directions of equal prevalence.

⁴ Average

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

HALIFAX, N.S.—44°39'N, 63°34'W.

ALTITUDE ABOVE M.S.L.: 83 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0200 A.S.T.	0800 A.S.T.	1400 A.S.T.	2000 A.S.T.
		Maximum	Minimum	Maximum	Minimum	Highest Re-recorded	Lowest Re-recorded					
°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.	
Jan.....	24.4	32.0	16.7	49	—3	57	—17	1,262	79	82	69	77
Feb.....	23.4	31.0	15.7	46	—2	54	—21	1,180	78	81	63	72
Mar.....	31.2	38.2	24.2	54	8	70	—10	1,042	78	77	60	71
Apr.....	39.5	47.0	32.0	64	22	83	7	765	81	76	60	73
May.....	49.5	58.4	40.6	77	31	90	22	484	85	76	62	74
June....	58.1	67.1	49.1	84	40	94	32	226	87	77	63	76
July....	65.0	73.8	56.3	85	49	99	33	55	89	81	64	79
Aug.....	65.1	73.4	56.8	85	48	94	39	58	88	82	65	80
Sept....	59.2	67.0	51.4	81	39	94	29	190	87	82	65	81
Oct.....	50.0	57.3	42.6	71	29	88	19	469	84	82	63	78
Nov.....	40.2	46.8	33.7	61	20	75	4	745	84	84	71	80
Dec.....	29.0	35.5	22.5	52	5	62	—14	1,109	78	80	68	75
Year...	44.6	52.3	36.8	88	—5	99	—21	7,585	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ²
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
in.	No.	in.	No.	in.	in.							
Jan.....	3.45	9	17.1	9	5.16	2.59	NW	31	11.8	95	³	29
Feb.....	2.36	7	16.0	9	3.96	2.37	NW	33	12.5	113	0	28
Mar.....	3.23	9	11.0	7	4.33	2.24	NW	29	11.4	148	³	25
Apr.....	4.02	11	4.6	4	4.48	2.54	NW	26	11.5	152	1	15
May.....	4.35	14	0.1	³	4.36	3.56	NW,SW ⁴	16	9.9	200	1	1
June....	4.32	13	0	0	4.32	3.24	SW	20	8.8	212	1	0
July....	3.62	12	0	0	3.62	2.99	SW	26	7.7	239	2	0
Aug....	4.06	10	0	0	4.06	3.61	SW	24	7.8	219	2	0
Sept....	4.61	7	0	0	4.61	9.40	NW	23	8.7	169	1	0
Oct....	5.10	11	0.2	³	5.12	2.90	NW	27	10.0	152	³	1
Nov....	4.78	14	2.5	2	5.03	2.40	NW	28	11.0	89	³	9
Dec....	3.95	9	12.6	7	5.21	2.94	NW	28	12.4	88	³	26
Year...	47.85	126	64.1	38	54.26	9.40	NW	24	10.3	1,876	8	134

¹ City data; except wind data from Dartmouth airport.
of first Fall frost Oct. 12.

² Average less than 0.5 days.

³ Average date of last Spring frost May 13;

⁴ Two directions of equal prevalence.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

SYDNEY, N.S.¹—46°10'N, 60°03'W.

ALTITUDE ABOVE M.S.L.: 197 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY				
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0200 A.S.T.	0800 A.S.T.	1400 A.S.T.	2000 A.S.T.	
		Maximum	Minimum	Maximum	Minimum	Highest Re-corded	Lowest Re-corded						
°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.		
Jan.	22.7	30.2	15.2	47	—2	58	—25	1,310	86	86	78	86	
Feb.	19.8	28.3	11.3	43	—5	59	—25	1,280	86	86	76	86	
Mar.	27.6	35.1	20.2	50	2	65	—24	1,160	87	82	70	82	
Apr.	36.5	44.1	28.9	63	17	81	0	850	88	80	69	83	
May.	46.6	56.3	37.0	75	28	89	20	570	90	78	69	84	
June.	56.2	66.5	46.0	83	35	94	27	270	92	85	66	83	
July.	65.0	74.9	55.0	87	44	92	33	60	93	80	65	85	
Aug.	64.8	73.9	55.8	86	44	98	36	80	93	82	67	88	
Sept.	58.0	66.4	49.6	81	37	90	28	220	92	85	69	88	
Oct.	48.6	56.0	41.1	71	29	81	22	510	92	85	64	86	
Nov.	39.0	45.3	32.8	60	21	72	6	780	89	88	77	88	
Dec.	28.7	34.5	22.9	51	9	60	—10	1,130	86	87	78	85	
Year ...	42.8	51.0	34.6	89	—9	98	—25	8,220	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ²	
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days	
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage					
	in.	No.	in.	No.	in.	in.							
Jan.	2.52	7	23.4	12	4.86	2.25	W	34	14.4	69	3	30	
Feb.	1.89	6	25.2	12	4.41	1.60	W	28	14.2	97	0	28	
Mar.	2.41	8	17.4	9	4.15	1.39	N	22	12.4	122	3	30	
Apr.	2.87	11	9.0	5	3.77	2.21	N	21	12.9	139	3	24	
May.	3.63	13	0.4	1	3.67	2.66	S	21	12.2	182	1	5	
June.	3.18	13	0	0	3.18	2.02	SW	20	11.0	208	1	3	
July.	2.98	11	0	0	2.98	2.55	SW	33	11.7	258	2	0	
Aug.	3.92	10	0	0	3.92	2.37	SW	24	11.0	218	2	0	
Sept.	4.30	14	0	0	4.30	3.58	SW	25	11.8	173	1	3	
Oct.	5.20	14	0.2	3	5.22	2.32	SW, W ⁴	21	13.6	144	3	4	
Nov.	4.66	15	3.2	2	4.98	3.83	W	21	13.2	73	3	13	
Dec.	3.39	9	17.8	11	5.17	2.37	W	32	14.0	62	0	28	
Year ...	40.95	131	96.6	52	50.61	3.83	W	21	12.7	1,745	7	162	

¹ Combined city and airport data.
Average less than 0.5 days.

² Average date of last Spring frost May 29; of first Fall frost Oct. 13.
⁴ Two directions of equal prevalence.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

YARMOUTH, N.S.¹—43°50'N, 66°05'W.

ALTITUDE ABOVE M.S.L.: 136 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0200 A.S.T.	0800 A.S.T.	1400 A.S.T.	2000 A.S.T.
		Maximum	Minimum	Maximum	Minimum	Highest Re- corded	Lowest Re- corded					
	°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.
Jan.....	27.0	33.6	20.4	47	3	55	−6	1,180	85	87	80	83
Feb.....	26.2	32.6	19.7	45	5	54	−12	1,100	83	84	76	80
Mar.....	32.5	38.5	26.5	52	12	66	−2	1,010	85	81	73	77
Apr.....	40.0	46.5	33.5	60	24	73	15	750	87	85	72	86
May.....	48.7	56.1	41.3	67	32	76	25	510	92	83	72	86
June.....	56.0	63.5	48.4	75	40	83	31	270	92	84	78	88
July....	61.6	69.1	54.0	78	47	86	41	110	94	89	78	91
Aug.....	62.0	69.7	54.2	79	46	85	39	120	94	84	76	90
Sept....	57.2	64.5	49.8	76	37	83	31	230	92	90	76	90
Oct.....	49.6	56.4	42.7	68	29	76	25	480	89	87	74	86
Nov.....	41.0	47.3	34.8	59	21	66	10	720	88	88	79	87
Dec.....	31.4	37.5	25.3	53	8	61	−11	1,040	85	86	80	83
Year...	44.4	51.3	37.6	80	0	86	−12	7,520	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUNSHINE	THUNDER	FREEZING TEMPERATURES ²
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in.	No.	in.	No.	in.	in.						
Jan.....	2.76	8	23.9	12	5.15	2.74	NW	29	13.7		3	28
Feb.....	2.00	7	21.4	11	4.14	2.36	NW	32	14.2		3	27
Mar.....	2.73	8	12.6	7	3.99	3.78	NW	26	13.1		3	24
Apr.....	3.47	11	4.3	2	3.90	2.06	NW	22	12.6		3	12
May.....	3.43	11	T	3	3.43	2.85	SW	20	10.9		1	1
June....	3.21	11	0	0	3.21	2.69	SW	28	10.6		2	0
July....	3.04	9	0	0	3.04	2.57	SW	31	9.5		2	0
Aug.....	3.08	9	0	0	3.08	3.98	SW	28	9.1		1	0
Sept....	3.79	10	T	3	3.79	2.61	SW	22	10.1		1	0
Oct.....	3.82	10	0.1	3	3.83	1.80	SW	20	11.4		3	1
Nov.....	4.13	13	2.8	2	4.41	4.38	NW	20	12.0		3	10
Dec.....	3.31	9	18.0	10	5.11	2.42	NW	27	13.3		0	24
Year...	38.77	116	83.1	44	47.08	4.38	NW	21	11.7		7	127

¹ Combined city and airport data.

² Average date of last Spring frost May 7; of first Fall frost Oct. 14.

³ Average less than 0.5 days.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

CHATHAM, N.B.¹—47°01'N, 65°27'W.

ALTITUDE ABOVE M.S.L.: 112 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0200 A.S.T.	0800 A.S.T.	1400 A.S.T.	2000 A.S.T.
		Maximum	Minimum	Maximum	Minimum	Highest Re-recorded	Lowest Re-recorded					
°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.	
Jan....	12.7	23.0	2.5	43	-22	53	-43	1,620	88	90	72	83
Feb....	13.5	24.4	2.4	42	-21	55	-39	1,450	86	90	70	81
Mar....	24.8	34.3	15.4	51	-10	67	-25	1,250	83	81	62	74
Apr....	36.5	45.7	27.4	66	13	85	4	850	84	77	60	75
May....	49.1	60.2	38.1	80	26	93	20	490	85	72	50	68
June....	59.5	70.6	48.4	88	35	96	29	180	87	75	47	69
July....	66.5	77.5	55.3	90	43	98	38	40	88	77	56	73
Aug....	64.4	75.3	53.4	89	40	102	33	80	90	81	52	76
Sept....	56.0	66.3	45.6	82	30	93	23	270	91	84	57	82
Oct....	44.4	54.4	34.5	72	20	84	12	640	88	86	60	80
Nov....	32.6	40.3	24.9	60	6	70	-12	970	90	89	75	87
Dec....	18.3	26.7	9.9	45	-13	61	-30	1,450	83	83	74	86
Year...	39.8	49.9	29.8	93	-25	102	-43	9,290	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ²
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in.	No.	in.	No.	in.	in.						
Jan....	0.69	3	20.9	11	2.78	2.26	W	31	8.9	94	3	31
Feb....	0.44	3	17.6	11	2.20	2.12	W	24	9.3	114	0	28
Mar....	0.92	5	15.3	10	2.45	1.98	W	22	9.7	144	3	29
Apr....	1.91	9	8.7	4	2.78	1.83	NE,SW, W ⁴	17	9.5	165	0	24
May....	2.96	13	0.2	3	2.98	2.29	NE	19	9.1	172	3	7
June....	3.68	14	0	0	3.68	1.87	SW	26	8.6	215	2	1
July....	3.03	12	0	0	3.03	1.83	SW	38	8.4	272	3	0
Aug....	3.49	12	0	0	3.49	2.37	SW	31	7.9	228	2	0
Sept....	3.30	12	T	3	3.30	2.50	SW	33	8.4	191	1	3
Oct....	3.66	12	1.0	3	3.76	2.10	SW	28	9.0	152	3	17
Nov....	2.75	10	8.2	5	3.57	2.54	SW,W ⁶	23	8.8	91	3	24
Dec....	1.03	5	16.6	9	2.69	1.48	W	28	8.9	91	0	30
Year...	27.86	110	88.5	50	36.71	2.54	SW	24	8.9	1,929	8	188

¹ Combined city and airport data.

² Average date of last Spring frost May 21; of first Fall frost Sept. 28.

³ Average less than 0.5 days.

⁴ Three directions of equal prevalence.

⁵ Two directions of equal prevalence.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

MONCTON, N.B.—46°07'N, 64°41'W.

ALTITUDE ABOVE M.S.L.: 248 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0200 A.S.T.	0800 A.S.T.	1400 A.S.T.	2000 A.S.T.
		Maximum	Minimum	Maximum	Minimum	Highest Re- corded	Lowest Re- corded					
°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.	
Jan.....	16.1	25.0	7.2	45	-14	63	-32	1,520	87	88	77	83
Feb.....	16.3	25.4	7.2	45	-13	59	-33	1,380	85	88	74	78
Mar.....	26.5	34.9	18.1	54	-2	66	-25	1,190	83	82	63	75
Apr.....	37.3	46.0	28.6	68	17	83	4	830	85	78	59	74
May.....	49.6	60.6	38.6	80	25	91	20	480	86	75	55	71
June.....	58.4	69.4	47.4	89	34	94	25	200	87	77	57	72
July....	65.8	77.0	54.6	90	43	96	35	50	89	80	56	74
Aug....	64.2	75.6	52.8	89	40	99	31	80	90	83	56	76
Sept....	56.3	66.9	45.7	84	30	92	24	260	91	82	59	80
Oct....	46.1	55.9	36.3	73	21	83	14	590	88	87	60	80
Nov....	34.8	42.2	27.4	63	12	73	-4	910	88	88	72	84
Dec....	21.7	29.6	13.8	49	-9	65	-25	1,340	88	89	75	85
Year...	41.1	50.7	31.5	92	-17	99	-33	8,830	...	...	...	...
	PRECIPITATION						WIND		BRIGHT SUNSHINE	THUNDER	FREEZING TEMPERATURES ¹	
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in.	No.	in.	No.	in.	in.						
Jan.....	0.48	3	24.8	8	2.96	2.18	W	31	14.6	105	³	30
Feb.....	0.87	3	27.1	9	3.58	2.80	W	26	14.5	123	0	28
Mar.....	1.52	6	16.3	6	3.15	1.74	W	21	13.9	144	³	29
Apr.....	1.65	9	15.1	4	3.16	1.80	SW	19	13.9	162	³	23
May.....	3.37	14	0.4	³	3.41	1.84	SW	19	12.8	207	1	9
June....	3.66	13	T	³	3.66	2.29	SW	26	11.9	205	3	2
July....	2.94	10	0	0	2.94	1.89	SW	37	11.2	228	4	³
Aug....	3.24	10	0	0	3.24	2.59	SW	33	11.0	219	2	³
Sept....	3.80	13	0	0	3.80	1.90	SW	32	11.7	159	1	5
Oct....	3.14	11	1.0	1	3.24	1.60	SW	27	13.0	145	1	15
Nov....	3.67	11	6.6	3	4.33	2.08	W	22	12.8	92	³	23
Dec....	1.79	6	17.1	7	3.50	1.85	W	34	14.0	88	0	30
Year...	30.13	109	108.4	38	40.97	2.80	SW	24	12.9	1,877	12	194

¹ Airport data; except combined extreme temperature data from city and airport and bright sunshine data from Fredericton Experimental Farm.

² Average date of last Spring frost June 1; of first Fall frost Sept. 14.

³ Average less than 0.5 days.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

SAINT JOHN, N.B.¹—45°17'N, 66°04'W.

ALTITUDE ABOVE M.S.L.: 119 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY				
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0200 A.S.T.	0800 A.S.T.	1400 A.S.T.	2000 A.S.T.	
		Maximum	Minimum	Maximum	Minimum	Highest Re- corded	Lowest Re- corded						
	°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.	
Jan....	19.8	28.0	11.5	46	−9	55	−22	1,400		83	75	77	
Feb....	20.2	28.4	12.1	43	−6	51	−20	1,270		83	70	74	
Mar....	29.5	36.7	22.3	51	3	62	−10	1,100		80	67	73	
Apr....	38.9	46.2	31.6	61	20	75	6	780		79	65	70	
May....	48.9	57.0	40.8	72	32	87	26	500		80	66	77	
June....	56.6	64.7	48.4	79	41	89	35	250		83	70	81	
July....	61.8	69.8	53.7	81	48	89	40	110		86	71	83	
Aug....	62.2	69.9	54.5	81	48	90	42	110		88	70	83	
Sept....	56.6	63.9	49.4	76	38	93	31	250		88	68	84	
Oct....	47.8	54.7	40.9	69	28	84	20	530		86	67	83	
Nov....	37.2	43.5	30.9	57	14	70	−9	830		88	75	83	
Dec....	24.6	31.8	17.4	49	−3	59	−21	1,250		85	74	79	
Year...	42.0	49.6	34.5	85	−12	93	−22	8,380		...	...	...
	PRECIPITATION						WIND			BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ²	
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days	
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage					
	in.	No.	in.	No.	in.	in.							
Jan....	2.50	7	20.5	11	4.55	1.58	NW	47	13.5	113	3	3	
Feb....	1.57	6	18.5	11	3.42	2.12	NW	46	13.5	127	0	2	
Mar....	2.54	8	13.9	9	3.93	2.35	NW	38	12.6	156	3	2	
Apr....	3.02	11	6.0	4	3.62	2.24	NW	27	11.3	162	1	1	
May....	3.42	15	T	3	3.42	2.12	SE	22	9.5	204	1	1	
June....	3.64	14	0	0	3.64	2.96	SE	26	8.5	202	2	2	
July....	3.28	14	0	0	3.28	2.38	SE	29	7.2	211	3	3	
Aug....	3.89	13	0	0	3.89	3.54	SE	27	7.3	210	2	2	
Sept....	4.19	14	0	0	4.19	2.72	NW	27	9.1	168	1	1	
Oct....	4.43	13	0.4	3	4.47	2.50	NW	32	10.6	147	1	1	
Nov....	4.10	13	5.1	4	4.61	3.61	NW	35	12.2	100	3	1	
Dec....	2.81	9	15.6	8	4.37	2.06	NW	46	13.6	102	3	2	
Year...	39.39	137	80.0	47	47.39	3.61	NW	30	10.7	1,902	11	14	

¹ Observatory data. less than 0.5 days.

² Average date of last Spring frost May 4; of first Fall frost Oct. 16.

³ Average

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

BAGOTVILLE, QUE.¹—48°20'N, 71°00'W.

ALTITUDE ABOVE M.S.L.: 536 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0100 E.S.T.	0700 E.S.T.	1300 E.S.T.	1900 E.S.T.
		Maximum	Minimum	Maximum	Minimum	Highest Re- corded	Lowest Re- corded					
°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.	
Jan.....	2.9	12.9	−7.1	40	−31	55	−41	1,950	86	90	84	90
Feb.....	6.8	17.4	−3.8	40	−30	49	−46	1,710	85	88	82	88
Mar....	19.0	28.9	9.1	47	−18	62	−26	1,450	77	76	76	83
Apr....	35.1	44.2	26.0	63	10	77	−12	940	80	78	62	73
May....	49.1	60.6	37.6	84	23	90	15	570	80	75	52	62
June....	59.3	70.0	48.6	88	32	94	28	220	84	78	54	65
July....	63.8	74.8	52.8	92	41	96	39	80	85	82	59	70
Aug....	62.0	72.6	51.4	87	40	95	35	120	86	84	60	75
Sept....	54.9	62.4	47.4	84	27	89	20	370	89	87	62	78
Oct....	41.0	49.5	32.5	72	20	83	14	740	82	87	65	78
Nov....	27.7	33.9	21.5	54	5	69	−9	1,160	84	89	77	86
Dec....	12.5	20.4	4.6	41	−23	59	−30	1,730	86	90	85	91
Year...	36.2	45.6	26.7	93	−36	96	−46	11,040	...	...	...	...
	PRECIPITATION						WIND		BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ²	
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
in.	No.	in.	No.	in.	in.							
Jan.....	0.32	2	25.7	14	2.89	1.80	W	47	10.9		0	31
Feb.....	0.13	1	25.5	12	2.68	1.25	W	46	11.1		0	28
Mar....	0.74	3	19.8	9	2.72	1.40	W	41	9.5			30
Apr....	1.59	7	9.3	5	2.52	1.23	W	39	11.5			24
May....	2.63	11	1.1	1	2.74	1.23	W	37	12.5			9
June....	4.58	15	T	3	4.58	2.85	E	31	10.8		2	2
July....	4.16	14	0	0	4.16	1.68	W	38	9.9		3	0
Aug....	3.62	14	0	0	3.62	1.88	W	38	9.3		3	0
Sept....	3.31	14	T	3	3.31	2.75	W	34	9.9		1	3
Oct....	2.59	13	1.9	2	2.78	1.53	W	35	10.6			14
Nov....	1.44	7	15.9	9	3.03	1.20	E	32	11.2			26
Dec....	0.58	2	31.1	13	3.69	1.75	W	45	11.6		0	31
Year...	25.69	103	130.3	65	38.72	2.85	W	39	10.7		9	198

¹ Airport data. less than 0.5 days.

² Average date of last Spring frost June 1; of first Fall frost Sept. 16.

³ Average

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

Knob Lake, Que.—54°49'N, 66°49'W.

ALTITUDE ABOVE M.S.L.: 1,681 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0200 A.S.T.	0800 A.S.T.	1400 A.S.T.	2000 A.S.T.
		Maximum	Minimum	Maximum	Minimum	Highest Recorded	Lowest Recorded					
	°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.
Jan....	-11.9	-3.2	-20.6	23	-44	40	-55	2,410				
Feb....	-6.7	3.7	-17.1	27	-43	39	-59	2,040				
Mar....	7.0	16.9	-3.0	40	-32	49	-42	1,810				
Apr....	21.3	30.2	12.4	44	-10	47	-33	1,300				
May....	34.0	42.5	25.4	64	10	83	4	910	85	78	65	71
June....	48.7	58.1	39.3	74	27	83	18	450	86	76	60	66
July....	55.1	64.0	46.2	80	35	88	32	300	85	77	61	70
Aug....	51.4	59.4	43.4	75	33	83	31	410	84	77	58	71
Sept....	42.2	48.9	35.5	69	23	75	15	670	90	85	69	82
Oct....	30.8	36.9	24.6	54	8	63	-2	1,080				
Nov....	15.8	22.4	9.1	40	-17	46	-32	1,500				
Dec....	-0.4	7.7	-8.4	34	-35	41	-49	2,010				
Year...	23.9	32.3	15.5	83	-48	88	-59	14,890	...	...	...	...
	PRECIPITATION						WIND		BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ¹	
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in.	No.	in.	No.	in.	in.						
Jan....	0.01	²	15.8	12	1.59	1.00	NW	29	11.4		0	31
Feb....	0.01	²	15.7	9	1.58	1.00	NW	36	9.4		0	28
Mar....	0.05	1	18.5	21	1.90	0.70	NW	31	11.5		0	31
Apr....	0.19	1	11.7	13	1.36	0.69	NW	24	9.1		0	29
May....	0.48	5	7.8	11	1.26	1.10	NW	25	10.2		0	25
June....	2.79	14	3.2	3	3.11	1.09	SE	24	10.3		1	7
July....	3.52	19	T	²	3.52	1.42	NW	28	9.9		2	0
Aug....	3.45	19	0.3	²	3.48	1.53	NW	28	10.7		1	²
Sept....	2.18	13	8.9	4	3.07	1.19	NW	30	8.6		²	11
Oct....	1.52	9	14.2	11	2.94	1.40	NW	27	11.1		²	25
Nov....	0.38	2	21.4	21	2.52	0.95	NW	21	10.4		0	30
Dec....	0.11	2	11.1	16	1.22	0.85	NW	31	9.5		0	31
Year...	14.69	85	128.6	121	27.55	1.53	NW	28	10.2		4	248

¹ Average date of last Spring frost June 21; of first Fall frost Aug. 30.

² Average less than 0.5 days.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

MONTREAL, QUE.¹—45°30'N, 73°34'W.

ALTITUDE ABOVE M.S.L.: 187 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0100 E.S.T.	0700 E.S.T.	1300 E.S.T.	1900 E.S.T.
		Maximum	Minimum	Maximum	Minimum	Highest Re-corded	Lowest Re-corded					
	°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.
Jan....	15.4	22.7	8.2	43	-12	55	-27	1,540	80	80	74	76
Feb....	16.4	23.6	9.3	40	-8	57	-29	1,370	78	80	66	71
Mar....	28.0	34.6	21.3	52	1	77	-20	1,150	77	79	60	68
Apr....	41.6	49.5	33.8	72	20	86	2	700	78	75	64	64
May....	55.6	64.3	46.9	82	34	94	23	300	78	74	52	60
June....	65.6	74.2	56.9	88	45	94	34	50	80	75	54	62
July....	70.4	78.7	62.1	89	53	97	46	10	80	77	53	62
Aug....	68.2	76.3	60.1	88	50	96	43	40	80	78	53	64
Sept....	59.6	67.1	52.0	83	39	91	32	180	83	83	56	71
Oct....	48.0	54.9	41.2	73	28	84	19	530	82	85	59	72
Nov....	35.2	40.6	29.7	60	12	72	-18	890	81	83	69	79
Dec....	20.7	26.7	14.7	45	-7	59	-29	1,370	81	82	74	79
Year...	43.7	51.1	36.3	91	-16	97	-29	8,130	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ²
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in.	No.	in.	No.	in.	in.						
Jan....	1.16	5	23.8	14	3.54	1.75	SW	25	12.6	79	0	30
Feb....	0.57	3	21.5	14	2.72	1.20	W	26	12.7	102	0	28
Mar....	1.46	6	18.0	11	3.26	1.67	SW	27	12.5	145	1	25
Apr....	2.72	11	6.5	3	3.37	1.62	SW	25	12.3	167	1	10
May....	3.30	13	T	3	3.30	2.04	SW	26	11.2	203	2	1
June....	3.76	13	0	0	3.76	2.68	SW	33	9.9	222	4	0
July....	3.97	13	0	0	3.97	2.71	SW	37	9.3	244	5	0
Aug....	3.48	10	0	0	3.48	2.98	SW	35	9.1	223	4	0
Sept....	3.72	12	T	3	3.72	1.94	SW	29	9.7	170	2	0
Oct....	3.33	16	0.7	1	3.40	3.39	SW	26	10.5	126	1	3
Nov....	3.00	10	9.2	6	3.92	2.08	SW	21	11.5	69	0	17
Dec....	1.25	6	21.1	13	3.36	1.96	W	29	11.9	61	3	29
Year...	31.72	118	100.8	62	41.80	3.39	SW	28	11.1	1,811	20	143

¹ McGill Observatory data; except humidity and wind data from Dorval airport.
last Spring frost Apr. 28; of first Fall frost Oct. 17.

² Average date of

³ Average less than 0.5 days.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

QUEBEC, QUE.¹—46°48'N, 71°13'W.

ALTITUDE ABOVE M.S.L.: 296 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0100 E.S.T.	0700 E.S.T.	1300 E.S.T.	1900 E.S.T.
		Maximum	Minimum	Maximum	Minimum	Highest Recorded	Lowest Recorded					
	°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.
Jan....	12.0	19.1	4.8	39	-16	52	-34	1,640	86	89	81	84
Feb....	13.4	20.8	6.1	38	-13	53	-32	1,460	90	88	77	83
Mar....	24.8	31.8	17.9	47	-4	64	-23	1,250	83	85	67	77
Apr....	37.9	45.1	30.7	66	16	80	-2	810	81	80	66	73
May....	52.0	61.1	42.8	80	30	91	18	400	81	75	55	67
June....	62.4	71.7	53.1	86	41	94	31	100	84	78	56	68
July....	67.6	76.6	58.7	87	48	97	39	20	87	81	60	69
Aug....	65.3	73.7	56.9	85	46	96	37	70	87	81	57	72
Sept....	56.8	64.7	49.0	80	35	88	22	250	86	85	60	77
Oct....	45.4	52.0	38.8	69	26	82	14	610	83	85	63	76
Nov....	32.0	37.2	26.9	57	8	71	-14	990	87	86	76	84
Dec....	17.5	23.5	11.5	41	-11	59	-32	1,470	87	89	91	87
Year...	40.6	48.1	33.1	90	-19	97	-34	9,070	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ²
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in.	No.	in.	No.	in.	in.						
Jan....	0.74	3	28.9	16	3.63	2.64	W	29	10.0	82	0	31
Feb....	0.23	1	25.7	14	2.80	1.69	W	29	10.3	104	0	28
Mar....	0.91	5	20.4	12	2.95	1.30	NE	27	10.8	142	3	23
Apr....	2.19	10	11.0	6	3.29	1.81	NE	32	10.0	161	1	18
May....	3.52	13	0.3	3	3.55	1.36	NE	33	10.3	191	2	2
June....	4.50	14	T	3	4.50	4.11	SW	26	8.3	200	4	0
July....	4.40	14	0	0	4.40	2.95	SW	31	7.2	221	5	0
Aug....	4.41	12	0	0	4.41	5.17	SW	26	7.1	206	3	0
Sept....	4.21	12	0	0	4.21	2.86	W	26	7.5	155	1	3
Oct....	3.60	12	1.2	1	3.72	1.76	W	28	8.3	119	3	4
Nov....	2.70	9	13.0	9	4.00	2.07	W	28	9.7	67	0	20
Dec....	0.98	4	23.2	15	3.30	1.76	W	30	9.6	66	0	31
Year...	32.39	109	123.7	73	44.76	5.17	W,SW⁴	24	9.1	1,714	16	162

¹ Observatory data; except humidity data from Ancienne Lorette airport. frost May 11; of first Fall frost Oct. 5.

² Average less than 0.5 days.

³ Average date of last Spring

⁴ Two directions of equal prevalence.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

SEPT ÎLES, QUE.¹—50°13'N, 66°16'W.

ALTITUDE ABOVE M.S.L.: 190 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.				
		Maximum	Minimum	Maximum	Minimum	Highest Recorded	Lowest Recorded		0200 A.S.T.	0800 A.S.T.	1400 A.S.T.	2000 A.S.T.
	°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.
Jan....	3.2	13.5	-7.1	36	-31	41	-46	1,860	88	89	82	89
Feb....	6.9	18.0	-4.2	38	-26	51	-37	1,610	88	88	79	87
Mar....	17.8	28.1	7.5	43	-16	49	-25	1,420	84	82	74	84
Apr....	30.9	38.7	23.1	50	6	56	-12	1,010	80	78	73	80
May....	41.5	49.6	33.4	66	26	75	11	710	84	71	66	76
June....	51.8	60.9	42.7	77	32	90	27	380	82	73	65	71
July....	59.2	67.6	50.8	80	41	90	35	170	88	78	68	76
Aug....	57.8	67.1	48.5	79	37	87	31	230	89	79	66	81
Sept....	49.1	57.8	40.4	74	27	85	23	460	89	83	69	83
Oct....	38.6	46.5	30.7	61	16	72	9	810	86	83	68	83
Nov....	26.5	33.5	19.5	49	-3	59	-20	1,110	83	85	75	86
Dec....	12.0	20.9	3.1	39	-19	49	-33	1,600	89	89	83	88
Year...	33.0	41.9	24.0	83	-33	90	-46	11,370	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ²
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in.	No.	in.	No.	in.	in.						
Jan....	0.35	2	37.8	15	4.13	2.60	N	30	11.9		0	31
Feb....	0.16	1	35.8	12	3.74	1.55	N	22	12.2		0	28
Mar....	0.29	2	28.0	9	3.09	2.00	N	22	12.6		0	31
Apr....	1.29	6	9.0	5	2.19	1.90	N	18	11.0		3	27
May....	3.07	10	0.8	1	3.15	1.93	E	21	11.0		3	13
June....	2.95	12	T	3	2.95	1.83	E	22	9.3		1	2
July....	4.47	14	0	0	4.47	3.34	E	18	8.9		2	0
Aug....	3.34	11	0	0	3.34	3.01	NW	13	9.2		2	0
Sept....	3.73	12	T	3	3.73	3.79	NW	18	10.2		0	4
Oct....	2.77	9	3.0	2	3.07	2.09	NW	20	9.7		0	18
Nov....	2.14	5	18.5	8	3.99	2.24	NW	21	11.3		0	26
Dec....	0.83	2	32.6	11	4.09	1.90	NW	25	12.1		0	30
Year...	25.39	86	165.5	63	41.94	3.79	NW	17	10.8		5	210

¹ Airport data. less than 0.5 days.

² Average date of last Spring frost June 4; of first Fall frost Sept. 10.

³ Average

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

KAPUSKASING, ONT.¹—49°25'N, 82°23'W.

ALTITUDE ABOVE M.S.L.: 715 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0100 E.S.T.	0700 E.S.T.	1300 E.S.T.	1900 E.S.T.
		Maximum	Minimum	Maximum	Minimum	Highest Recorded	Lowest Recorded					
	°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.
Jan.	-1.3	10.2	-12.7	34	-40	47	-53	2,030	90	90	83	89
Feb.	2.4	14.8	-10.0	36	-38	53	-52	1,750	91	91	79	86
Mar.	14.4	26.7	2.1	48	-28	67	-45	1,550	86	88	71	77
Apr.	30.8	42.2	19.4	67	-4	85	-23	1,030	78	80	59	62
May.	45.7	57.6	33.9	82	19	92	9	600	82	81	56	60
June.	57.3	69.4	45.1	87	30	96	20	240	84	81	56	60
July.	62.8	74.5	51.2	89	37	101	31	110	85	85	57	64
Aug.	60.4	71.3	49.6	86	35	95	25	180	89	89	61	72
Sept.	51.4	61.2	41.6	81	26	91	20	420	90	94	66	78
Oct.	39.9	47.9	31.9	70	16	82	4	790	88	92	68	79
Nov.	22.7	29.6	15.8	51	-12	68	-33	1,280	91	92	80	88
Dec.	7.5	15.5	-0.5	38	-31	60	-49	1,770	90	92	85	90
Year ...	32.8	43.4	22.3	91	-42	101	-53	11,750	...	...	...	...
	PRECIPITATION						WIND		BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ²	
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in.	No.	in.	No.	in.	in.						
Jan.	0.06	3	19.3	17	1.99	1.50	S	22	9.7	75	0	31
Feb.	0.06	3	13.1	15	1.37	1.10	NW	25	9.9	103	0	28
Mar.	0.22	1	14.2	12	1.64	1.40	NW	22	10.3	133	0	29
Apr.	0.82	4	8.3	7	1.65	1.19	NW	21	10.2	170	3	24
May.	2.03	14	2.6	2	2.29	2.20	N	21	9.8	202	1	14
June.	2.79	13	T	3	2.79	1.83	SW	18	9.5	216	3	2
July.	3.32	14	0	0	3.32	1.87	SW	21	9.0	234	5	0
Aug.	3.17	10	0	0	3.17	2.54	S,SW ⁴	20	8.5	196	4	3
Sept.	3.17	12	0.6	1	3.23	2.28	S	24	9.7	132	2	6
Oct.	1.80	9	3.1	4	2.11	1.86	S	22	10.3	90	1	14
Nov.	0.80	5	15.6	16	2.36	1.75	S	21	10.0	45	3	27
Dec.	0.17	1	19.0	17	2.07	1.40	NW	22	9.8	50	0	31
Year ...	18.41	83	95.8	91	27.99	2.54	NW	19	9.7	1,646	16	206

¹ Experimental Farm data; except humidity and wind data from airport.
frost June 14; of first Fall frost Sept. 5.

² Average less than 0.5 days.

³ Average date of last Spring

⁴ Two directions of equal

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

LONDON, ONT.¹—43°02'N, 81°09'W.

ALTITUDE ABOVE M.S.L.: 912 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY				
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0100 E.S.T.	0700 E.S.T.	1300 E.S.T.	1900 E.S.T.	
		Maximum	Minimum	Maximum	Minimum	Highest Recorded	Lowest Recorded						
	°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.	
Jan.....	22.5	29.5	15.5	46	—6	62	—26	1,320	89	91	82	86	
Feb.....	22.2	29.6	14.7	46	—5	59	—27	1,210	89	91	79	85	
Mar.....	31.5	39.5	23.5	61	4	79	—19	1,040	84	87	70	78	
Apr.....	43.2	52.9	33.5	75	20	87	0	650	82	84	61	71	
May.....	54.5	65.6	43.4	83	29	94	23	330	84	82	61	70	
June....	64.9	76.1	53.7	90	38	99	30	90	87	83	61	70	
July....	69.6	81.0	58.3	93	45	102	35	20	87	84	58	68	
Aug.....	68.0	79.3	56.7	91	43	106	34	40	88	88	58	71	
Sept....	60.9	71.5	50.3	87	33	98	26	150	88	90	62	77	
Oct.....	49.2	58.9	39.4	76	25	86	14	490	89	92	65	82	
Nov.....	37.0	43.8	30.3	64	14	76	—8	840	89	91	77	86	
Dec.....	26.2	32.4	19.9	49	—1	62	—22	1,200	88	90	80	86	
Year...	45.8	55.0	36.6	95	—11	106	—27	7,380	...	...	...	...
	PRECIPITATION						WIND		BRIGHT SUNSHINE	THUNDER	FREEZING TEMPERATURES ²		
	Rain		Snow		Total (water)		Most Prevalent				Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage					
	in.	No.	in.	No.	in.	in.							
Jan.....	1.56	7	18.9	13	3.45	1.28	SW	23	11.8	61	3	30	
Feb.....	1.16	5	16.5	13	2.81	1.38	W	23	11.9	90	0	28	
Mar.....	1.91	8	10.0	9	2.91	1.70	W	20	12.6	129	1	26	
Apr.....	2.67	11	3.0	3	2.97	1.57	NW	19	11.9	167	2	17	
May.....	3.03	12	0.2	3	3.05	1.64	NW	19	9.9	234	3	2	
June....	3.40	11	0	0	3.40	3.22	SW,NW ⁴	18	8.7	242	4	0	
July....	3.71	10	0	0	3.71	2.48	NW	19	7.5	278	7	0	
Aug.....	2.78	9	0	0	2.78	1.68	NW	17	7.3	253	4	0	
Sept....	3.51	11	T	3	3.51	3.28	SW	20	8.6	175	4	3	
Oct.....	2.74	11	1.0	1	2.84	2.24	SW	22	9.0	153	1	5	
Nov.....	2.43	10	10.8	6	3.51	1.93	SW	28	11.0	76	3	19	
Dec....	1.64	7	16.6	13	3.30	1.69	SW	29	11.1	64	3	29	
Year...	30.54	112	77.0	58	38.24	3.28	SW	20	10.1	1,922	26	156	

¹ Combined city and airport data.

² Average date of last Spring frost May 16; of first Fall frost Oct. 1.

³ Average less than 0.5 days.

⁴ Two directions of equal prevalence.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

NORTH BAY, ONT.¹—46°19'N, 79°28'W.

ALTITUDE ABOVE M.S.L.: 662 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0100 E.S.T.	0700 E.S.T.	1300 E.S.T.	1900 E.S.T.
		Maximum	Minimum	Maximum	Minimum	Highest Recorded	Lowest Recorded					
°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.	
Jan.	10.5	21.1	−0.1	39	−28	55	−43	1,690	91	91	81	89
Feb.	12.4	23.7	1.0	41	−26	55	−42	1,490	91	90	75	84
Mar.	23.8	34.2	13.4	52	−15	75	−35	1,280	83	86	67	74
Apr.	38.0	48.1	27.8	69	10	82	−7	810	76	76	57	65
May.	51.6	62.9	40.4	80	25	90	17	420	81	78	58	64
June.	62.0	73.4	50.6	87	36	97	21	120	85	81	60	67
July.	66.8	78.2	55.5	89	43	99	35	40	88	85	63	71
Aug.	64.8	76.3	53.4	87	40	94	32	90	90	88	63	77
Sept.	56.2	66.4	46.0	82	30	94	23	270	90	91	67	81
Oct.	44.9	53.9	35.9	72	21	82	9	620	88	91	67	80
Nov.	31.5	38.4	24.6	58	4	70	−15	1,000	87	90	75	84
Dec.	16.3	24.7	7.9	42	−22	57	−46	1,510	91	93	83	88
Year...	39.9	50.1	29.7	91	−33	99	−46	9,340	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ²
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in.	No.	in.	No.	in.	in.						
Jan.	0.41	3	16.1	11	2.02	1.19	N,E ³	18	10.8		0	31
Feb.	0.25	2	14.3	14	1.68	1.03	N	20	11.3		0	28
Mar.	0.82	4	12.0	10	2.02	1.05	N,SW ³	19	11.7		4	29
Apr.	1.89	8	4.3	3	2.32	1.27	SW	21	11.6		1	20
May.	2.86	12	0.1	4	2.87	1.55	SW	23	10.7		1	5
June.	3.39	11	0	0	3.39	2.15	SW	31	10.0		4	4
July.	3.85	11	0	0	3.85	3.20	SW	33	9.2		6	0
Aug.	2.66	11	0	0	2.66	2.72	SW	26	10.0		3	0
Sept.	3.84	12	0	0	3.84	2.95	SW	22	10.1		3	3
Oct.	2.78	11	1.3	1	2.91	2.49	SW	21	10.6		1	9
Nov.	1.98	9	8.1	8	2.79	1.25	N	17	10.8		4	22
Dec.	0.57	5	15.3	12	2.10	1.37	N	16	10.6		0	30
Year...	25.30	99	71.5	59	32.45	3.20	SW	21	10.6		19	177

¹ City data; except humidity and wind data from airport.

of first Fall frost Sept. 24.

² Two directions of equal prevalence.

³ Average date of last Spring frost May 22;

⁴ Average less than 0.5 days.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

OTTAWA, ONT.¹—45°24'N, 75°43'W.

ALTITUDE ABOVE M.S.L.: 260 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0100 E.S.T.	0700 E.S.T.	1300 E.S.T.	1900 E.S.T.
		Maximum	Minimum	Maximum	Minimum	Highest Recorded	Lowest Recorded					
°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.	
Jan.....	12.0	20.8	3.2	41	-23	54	-35	1,640	80	79	72	79
Feb.....	12.7	22.2	3.2	40	-21	54	-35	1,450	80	85	69	75
Mar.....	25.2	33.6	16.8	50	-9	78	-34	1,220	78	82	62	70
Apr.....	40.5	49.8	31.2	73	16	87	-5	730	74	73	54	64
May.....	54.2	65.3	43.2	83	28	95	21	330	78	75	53	64
June.....	64.1	75.2	53.0	89	39	98	33	70	81	78	55	65
July....	68.6	79.8	57.5	91	45	101	38	30	84	79	52	64
Aug....	66.4	77.8	55.0	90	41	100	35	60	84	83	52	66
Sept....	58.4	68.8	47.9	85	31	102	24	200	85	88	56	72
Oct....	46.1	55.4	36.8	75	21	87	14	580	84	87	60	74
Nov....	33.0	39.8	26.3	61	5	71	-11	970	81	81	69	78
Dec....	17.4	24.6	10.1	44	-18	61	-38	1,460	82	82	72	78
Year...	41.6	51.1	32.0	93	-28	102	-38	8,740	...	...	...	...
	PRECIPITATION						WIND		BRIGHT SUNSHINE	THUNDER	FREEZING TEMPERATURES ²	
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in.	No.	in.	No.	in.	in.						
Jan.....	0.80	4	18.7	11	2.67	1.16	NW	22	11.0	92	0	31
Feb.....	0.51	3	16.9	12	2.20	1.10	NW	23	11.4	116	0	28
Mar.....	1.37	5	14.4	9	2.81	1.90	NW	21	11.6	151	3	28
Apr.....	2.14	10	4.8	3	2.62	1.90	NW	21	11.4	185	1	15
May.....	2.84	11	T	3	2.84	2.99	NW	18	10.4	228	2	3
June....	3.43	11	0	0	3.43	3.05	SW	21	9.5	250	5	0
July....	3.53	11	0	0	3.53	2.82	SW	24	8.9	274	6	0
Aug....	2.97	10	0	0	2.97	3.56	SW	22	8.6	249	4	0
Sept....	3.12	11	T	3	3.12	3.67	SW	20	9.5	177	2	2
Oct....	2.64	11	0.6	3	2.70	1.99	SW	20	10.0	137	1	8
Nov....	2.26	9	7.1	5	2.97	1.44	NW	20	10.7	78	3	20
Dec....	1.23	5	18.0	11	3.03	1.39	NW	20	10.7	73	0	30
Year...	26.84	101	80.5	51	34.89	3.67	NW	19	10.3	2,010	21	165

¹ Experimental Farm data; except heating factor, humidity and wind data from Uplands airport and combined extreme temperature data from Experimental Farm and airport. ² Average date of last Spring frost May 11; of first Fall frost Sept. 29.

³ Average less than 0.5 days.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

PORT ARTHUR/FORT WILLIAM, ONT.¹—48°22'N, 89°19'W. ALTITUDE ABOVE M.S.L.: 644 Ft.

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0100 E.S.T.	0700 E.S.T.	1300 E.S.T.	1900 E.S.T.
		Maximum	Minimum	Maximum	Minimum	Highest Recorded	Lowest Recorded					
°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.	
Jan.....	7.6	16.9	-1.8	36	-27	48	-42	1,780	88	93	80	85
Feb.....	10.2	20.3	0.1	39	-23	52	-40	1,550	88	92	73	81
Mar.....	21.2	30.9	11.6	48	-13	73	-34	1,350	87	88	68	74
Apr.....	35.4	44.6	26.2	66	9	83	-10	880	83	84	60	64
May.....	47.4	57.8	37.0	80	24	91	16	540	87	85	55	60
June.....	57.2	67.8	46.7	85	34	97	27	240	92	89	62	66
July....	63.4	74.3	52.4	89	41	104	35	90	94	93	63	69
Aug....	61.9	72.4	51.4	87	38	96	31	120	94	95	63	72
Sept....	53.4	62.9	43.8	80	29	89	17	340	92	94	66	79
Oct....	42.6	51.1	34.1	70	18	83	4	690	89	91	64	79
Nov....	27.0	34.0	20.1	52	-2	69	-22	1,140	86	88	73	81
Dec....	13.7	21.9	5.5	40	-20	52	-38	1,590	89	91	78	84
Year...	36.8	46.2	27.3	91	-29	104	-42	10,310	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ²
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in.	No.	in.	No.	in.	in.						
Jan.....	0.15	1	21.3	14	2.28	2.03	W	37	9.5	96	0	31
Feb.....	0.05	1	13.7	10	1.42	1.32	W	29	9.3	126	0	28
Mar.....	0.35	1	16.1	8	1.96	1.65	W	22	10.0	156	1	30
Apr.....	1.07	5	10.8	5	2.15	2.73	W	20	10.4	183	^s	24
May.....	2.54	10	1.1	1	2.65	2.13	E	19	9.7	205	2	13
June....	4.12	18	0	0	4.12	1.94	E	21	8.9	206	5	2
July....	2.89	12	0	0	2.89	1.28	W	24	8.3	251	6	0
Aug....	3.68	12	0	0	3.68	2.40	W	25	7.8	226	6	^s
Sept....	3.34	11	T	^s	3.34	2.13	W	27	8.6	134	3	7
Oct.....	2.44	10	1.4	1	2.58	1.84	W	28	9.2	94	1	16
Nov....	1.36	5	11.4	8	2.50	2.07	W	31	9.6	50	^s	26
Dec....	0.29	1	17.6	12	2.05	1.68	W	40	9.5	70	0	31
Year...	22.28	87	93.4	59	31.62	2.73	W	26	9.2	1,797	24	208

¹ Combined city and airport data; except humidity, snow and wind from Fort William airport only and bright sunshine data from Armstrong, Ont.

² Average less than 0.5 days.

² Average date of last Spring frost June 4; of first Fall frost Sept. 7.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

TORONTO, ONT.¹—43°40'N, 79°24'W.

ALTITUDE ABOVE M.S.L.: 379 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0100 E.S.T.	0700 E.S.T.	1300 E.S.T.	1900 E.S.T.
		Maximum	Minimum	Maximum	Minimum	Highest Recorded	Lowest Recorded					
	°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.
Jan....	24.5	31.1	17.9	47	—4	60	—26	1,249	80	81	69	74
Feb....	24.0	30.8	17.2	46	—2	57	—25	1,147	78	80	67	72
Mar....	32.2	39.1	25.4	58	7	80	—16	1,018	69	72	57	63
Apr....	43.8	52.0	35.6	73	23	90	5	646	67	68	50	56
May....	55.1	64.5	45.7	82	33	93	25	316	70	70	53	58
June....	65.5	75.4	55.6	89	43	97	28	73	75	73	53	57
July....	70.8	80.6	60.9	92	51	105	39	8	79	77	53	59
Aug....	69.0	78.4	59.5	91	49	102	40	29	80	79	53	62
Sept....	61.6	70.5	52.7	86	38	100	28	154	80	83	56	70
Oct....	50.2	58.2	42.3	76	30	85	16	465	77	84	58	72
Nov....	39.2	45.1	33.2	63	18	75	—5	777	76	80	64	73
Dec....	28.4	34.2	22.5	50	2	61	—22	1,126	76	76	70	72
Year...	47.0	55.0	39.0	94	—8	105	—26	7,008	...	...	...	...
	PRECIPITATION						WIND		BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ²	
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in.	No.	in.	No.	in.	in.						
Jan....	1.31	6	14.1	12	2.72	2.06	W	22	14.7	77	0	28
Feb....	0.95	4	13.6	10	2.31	1.66	W	21	14.4	106	3	26
Mar....	1.64	8	9.4	7	2.58	1.69	NW	19	13.9	149	1	22
Apr....	2.24	10	3.1	3	2.55	1.84	E,NW ⁴	16	13.0	184	2	9
May....	2.64	12	0.1	3	2.65	2.04	E	18	10.4	223	3	3
June....	2.70	10	0	0	2.70	2.40	E,SW ⁴	17	9.1	263	4	0
July....	3.23	10	0	0	3.23	2.56	SW	18	8.3	286	4	0
Aug....	2.39	9	0	0	2.39	3.22	SW	16	8.4	256	3	0
Sept....	2.67	11	0	0	2.67	2.66	SW,NW ⁴	15	9.6	201	3	0
Oct....	2.27	10	0.2	3	2.29	3.82	SW	17	10.0	151	1	1
Nov....	2.12	10	4.3	5	2.55	2.02	SW	22	13.0	84	1	12
Dec....	1.31	7	9.8	8	2.29	2.05	SW	24	14.4	67	0	25
Year...	25.47	107	54.6	45	30.93	3.82	SW	17	11.6	2,047	22	123

¹ Meteorological Headquarters Observatory data.
Fall frost Oct. 15.

² Average less than 0.5 days.

³ Average date of last Spring frost May 3; of first

⁴ Two directions of equal prevalence.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

CHURCHILL, MAN.¹—58°45'N, 94°04'W.

ALTITUDE ABOVE M.S.L.: 115 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0000	0600	1200	1800
		Maximum	Minimum	Maximum	Minimum	Highest Recorded	Lowest Recorded		C.S.T.	C.S.T.	C.S.T.	C.S.T.
		°F.	°F.	°F.	°F.	°F.	°F.		p.c.	p.c.	p.c.	p.c.
Jan....	-17.3	-10.2	-24.4	13	-41	39	-57	2,590				
Feb....	-16.7	-9.0	-24.4	13	-38	34	-52	2,320				
Mar....	-4.4	4.2	-13.0	31	-32	41	-52	2,150				
Apr....	10.6	19.0	2.2	44	-18	64	-28	1,580				
May....	28.4	34.5	22.3	57	9	87	-14	1,130	94	92	85	87
June....	42.4	50.2	34.6	78	24	88	13	670	92	89	75	78
July....	54.7	63.8	45.6	84	36	96	22	360	90	89	70	71
Aug....	53.0	60.7	45.3	82	39	91	25	390	93	93	72	75
Sept....	43.1	48.3	37.9	69	26	84	15	710	92	94	83	85
Oct....	29.6	34.7	24.5	53	8	69	-17	1,110				
Nov....	9.6	16.0	3.2	34	-19	45	-53	1,660				
Dec....	-9.1	-2.0	-16.2	26	-34	34	-47	2,240				
Year...	18.7	25.9	11.5	86	-42	96	-57	16,910	...	...	...	...
	PRECIPITATION						WIND		BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ²	
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in.	No.	in.	No.	in.	in.						
Jan....	0	0	3.2	5	0.32	0.27	NW	41	14.0	73	0	31
Feb....	0	0	4.2	6	0.42	0.50	NW	38	14.2	117	0	28
Mar....	T	³	5.8	6	0.58	0.67	NW	39	13.9	171	0	31
Apr....	0.06	1	6.9	6	0.75	0.60	NW	28	14.4	182	0	30
May....	0.56	4	4.8	3	1.04	0.80	N	28	13.1	155	0	29
June....	1.23	9	0.4	1	1.27	1.19	N	22	12.0	200	1	14
July....	2.37	13	0	0	2.37	2.06	N	21	12.3	273	2	1
Aug....	2.58	12	0	0	2.58	2.01	NW	20	12.6	236	3	³
Sept....	2.04	12	2.0	1	2.24	1.40	N	22	14.8	92	³	7
Oct....	0.63	3	8.5	7	1.48	0.94	NW	30	16.1	64	0	23
Nov....	0.02	1	11.8	10	1.20	0.85	NW	29	15.1	36	0	30
Dec....	T	³	7.6	8	0.76	0.86	NW	36	16.0	47	0	31
Year...	9.49	55	55.2	53	15.01	2.06	NW	27	14.0	1,646	6	255

¹ Airport data; except for combined temperature extreme data from town and airport.
last Spring frost June 28; of first Fall frost Aug. 30.

² Average less than 0.5 days.

³ Average date of

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

THE PAS, MAN.¹—53°49'N, 101°15'W.

ALTITUDE ABOVE M.S.L.: 890 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0000 C.S.T.	0600 C.S.T.	1200 C.S.T.	1800 C.S.T.
		Maximum	Minimum	Maximum	Minimum	Highest Recorded	Lowest Recorded					
	°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.
Jan....	-6.2	3.3	-15.6	29	-40	44	-54	2,200	89	91	89	90
Feb....	-1.1	9.6	-11.8	34	-36	56	-54	1,850	90	90	86	86
Mar....	13.2	25.1	1.4	47	-26	59	-43	1,620	87	90	76	79
Apr....	32.6	44.0	21.2	69	-3	87	-21	1,010	79	85	58	63
May....	48.1	60.0	36.2	81	22	93	13	550	77	82	54	54
June....	57.8	69.2	46.4	84	33	93	25	250	82	82	61	57
July....	64.9	76.4	53.4	90	41	100	32	80	85	87	62	61
Aug....	61.4	72.6	50.2	87	37	96	22	160	87	91	66	66
Sept....	50.7	61.2	40.2	80	26	90	16	440	85	89	65	68
Oct....	38.1	47.1	29.1	68	12	80	-11	840	86	88	73	76
Nov....	16.9	24.5	9.3	46	-17	58	-33	1,480	89	91	83	86
Dec....	0.8	9.3	-7.8	34	-32	48	-51	1,980	93	93	91	92
Year...	31.4	41.9	21.0	92	-41	100	-54	12,460	...	...	...	...
	PRECIPITATION						WIND		BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ²	
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in.	No.	in.	No.	in.	in.						
Jan....	0.02	³	7.5	7	0.77	0.90	W	30	9.7	92	0	31
Feb....	0	0	7.8	7	0.78	0.55	E	18	9.6	128	0	28
Mar....	0.04	³	7.9	6	0.83	0.75	W	22	10.1	171	0	31
Apr....	0.40	3	5.3	4	0.93	0.80	W	17	10.8	214	³	24
May....	1.30	7	0.8	³	1.38	1.62	N	22	10.9	249	1	10
June....	2.30	11	T	³	2.30	2.45	N	19	10.1	237	3	1
July....	2.42	11	0	0	2.42	1.59	W	22	10.6	294	7	0
Aug....	2.30	10	0	0	2.30	1.85	E,W ⁴	16	10.2	254	5	0
Sept....	2.03	10	0.3	³	2.06	3.07	W	18	11.1	163	2	6
Oct....	0.75	7	3.6	3	1.11	1.05	W	23	12.0	120	³	18
Nov....	0.09	1	10.4	8	1.13	1.40	W	27	11.5	69	0	30
Dec....	0.01	³	9.6	8	0.97	0.80	W	27	10.5	70	0	31
Year...	11.66	60	53.2	43	16.98	3.07	W	20	10.6	2,061	18	210

¹ Town data; except heating factor and humidity data from airport.

² Average date of last Spring frost

May 30; of first Fall frost Sept. 9.

³ Average less than 0.5 days.

⁴ Two directions of equal prevalence.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

WINNIPEG, MAN.¹—49°54'N, 97°14'W.

ALTITUDE ABOVE M.S.L.: 786 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0000	0600	1200	1800
		Maximum	Minimum	Maximum	Minimum	Highest Recorded	Lowest Recorded		C.S.T.	C.S.T.	C.S.T.	C.S.T.
	°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.
Jan.....	0.6	9.2	-8.1	33	-33	46	-48	1,993	88	88	85	82
Feb.....	4.3	13.6	-5.0	35	-29	47	-47	1,714	92	91	87	87
Mar.....	18.6	27.8	9.4	48	-17	74	-38	1,441	88	90	79	82
Apr.....	38.0	47.7	28.4	72	9	93	-18	810	78	82	61	61
May.....	52.4	64.1	40.6	86	23	100	11	411	74	81	51	50
June....	62.0	73.1	50.8	89	34	101	21	147	79	84	55	54
July....	68.4	80.0	56.8	94	44	108	34	37	82	87	57	56
Aug.....	65.8	77.6	54.0	93	39	105	30	75	81	89	55	56
Sept....	55.4	66.1	44.7	87	28	99	17	311	81	88	59	62
Oct.....	42.9	52.2	33.6	74	17	86	-5	686	80	86	61	64
Nov.....	23.2	30.0	16.3	51	-6	71	-34	1,255	97	91	79	84
Dec.....	8.0	15.2	0.7	38	-26	53	-54	1,778	89	90	87	87
Year...	36.6	46.4	26.8	96	-35	108	-54	10,658	...	...	...	...
	PRECIPITATION						WIND		BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ²	
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in.	No.	in.	No.	in.	in.						
Jan.....	0.01	³	9.2	12	0.93	0.75	S	26	12.7	100	0	31
Feb.....	0.01	³	8.0	10	0.81	0.93	NW	25	12.3	130	0	28
Mar.....	0.23	1	9.0	8	1.13	1.50	S,NW ⁴	21	12.7	167	³	30
Apr.....	0.88	6	3.2	4	1.20	1.30	N,NW ⁴	21	14.1	204	1	19
May.....	1.99	9	0.8	2	2.07	1.91	N	23	13.5	245	2	8
June....	2.64	12	T	³	2.64	1.93	S	18	12.7	250	5	1
July....	2.72	11	0	0	2.72	2.72	S	23	11.5	294	6	0
Aug.....	2.49	9	0	0	2.49	2.57	S	23	11.2	263	6	0
Sept....	2.30	9	0.2	³	2.32	2.56	S	23	13.0	178	2	4
Oct.....	1.17	6	2.7	2	1.44	2.93	S	27	13.6	133	1	14
Nov.....	0.32	2	7.9	9	1.11	0.69	NW	25	13.3	84	0	28
Dec.....	0.02	1	8.4	10	0.86	0.98	S	27	12.6	78	0	31
Year...	14.78	66	49.4	57	19.72	2.93	S	22	12.8	2,126	23	194

¹ Combined city and airport data. ² Average date of last Spring frost May 27; of first Fall frost Sept. 15. Average less than 0.5 days ⁴ Two directions of equal prevalence.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

REGINA, SASK.¹—50°26'N, 104°40'W.

ALTITUDE ABOVE M.S.L.: 1,884 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0500 M.S.T.	1100 M.S.T.	1700 M.S.T.	2300 M.S.T.
		Maximum	Minimum	Maximum	Minimum	Highest Re- corded	Lowest Re- corded					
°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.	
Jan.....	2.3	12.0	-7.4	36	-33	48	-54	1,940	94	86	91	93
Feb.....	5.5	15.6	-4.6	38	-32	53	-56	1,680	95	88	93	96
Mar.....	19.2	29.1	9.3	50	-18	76	-44	1,420	94	85	86	93
Apr.....	38.6	50.3	26.8	74	8	91	-20	790	87	58	54	78
May.....	52.0	65.9	38.0	87	21	99	7	420	82	48	44	71
June....	59.8	72.7	47.0	89	33	102	23	190	87	54	53	79
July....	66.6	80.9	52.2	95	40	110	27	70	88	56	49	81
Aug.....	63.7	78.3	49.1	94	36	106	23	110	88	53	47	79
Sept....	53.2	67.0	39.4	88	21	99	7	370	87	54	48	77
Oct.....	40.9	53.1	28.7	75	9	88	-15	750	86	58	59	80
Nov.....	22.0	31.4	12.7	54	-12	73	-47	1,290	91	80	85	91
Dec.....	8.8	17.5	-0.1	41	-28	59	-55	1,740	93	89	92	95
Year...	36.1	47.8	24.2	98	-38	110	-56	10,770	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUNSHINE	THUNDER	FREEZING TEMPERATURES ²
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in.	No.	in.	No.	in.	in.						
Jan.....	0.02	1	6.3	10	0.65	0.70	NW	24	12.8	104	0	31
Feb.....	0.01	³	5.8	11	0.59	0.43	SE	26	13.0	119	0	28
Mar.....	0.10	1	6.8	9	0.78	0.76	SE	25	13.0	158	0	30
Apr.....	0.43	4	3.8	4	0.81	1.19	SE	23	14.0	216	1	23
May.....	1.54	7	0.6	1	1.60	1.79	SE	19	13.9	258	2	11
June....	3.24	13	T	³	3.24	3.75	SE	17	13.2	236	5	1
July....	2.13	10	0	0	2.13	2.57	SE,W ⁴	19	11.8	329	7	³
Aug....	1.74	9	0	0	1.74	3.10	SE	22	12.1	288	6	³
Sept....	1.10	7	1.2	³	1.22	1.03	SE,NW ⁴	19	12.6	203	1	8
Oct.....	0.59	5	2.6	2	0.85	0.93	SE	24	13.2	171	³	22
Nov.....	0.14	1	7.2	10	0.86	0.94	SE	24	13.0	94	0	29
Dec....	0.04	1	5.8	11	0.62	0.38	SE	27	12.1	88	³	31
Year...	11.08	59	40.1	58	15.09	3.75	SE	22	12.9	2,264	22	214

¹ Combined city and airport data.

² Average date of last Spring frost June 5; of first Fall frost Sept. 6.

³ Average less than 0.5 days.

⁴ Two directions of equal prevalence.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

SASKATOON, SASK.¹—52°08'N, 106°38'W.

ALTITUDE ABOVE M.S.L.: 1,690 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY				
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0500 M.S.T.	1100 M.S.T.	1700 M.S.T.	2300 M.S.T.	
		Maximum	Minimum	Maximum	Minimum	Highest Re- corded	Lowest Re- corded						
°F.	°F.	°F.	°F.	°F.	F.	°F.	No.	p.c.	p.c.	p.c.	p.c.		
Jan.	0.8	9.7	-8.2	36	-35	50	-55	1,990	93	88	86	92	
Feb.	4.6	13.9	-4.7	38	-31	55	-49	1,710	92	86	88	92	
Mar.	18.7	27.8	9.6	49	-16	73	-34	1,440	90	76	75	88	
Apr.	38.4	49.2	27.6	74	7	91	-17	800	83	56	53	76	
May.	51.8	64.5	39.1	86	24	99	9	420	76	47	42	68	
June.	59.8	71.6	48.1	88	35	104	26	180	82	48	44	72	
July.	66.4	79.3	53.5	95	42	104	31	60	85	49	42	74	
Aug.	63.2	76.3	50.0	93	37	100	28	110	87	53	44	76	
Sept.	52.5	64.7	40.3	85	25	95	12	380	84	54	47	75	
Oct.	40.6	51.4	29.8	74	13	90	-14	760	84	60	59	78	
Nov.	21.1	29.1	13.1	52	-12	68	-31	1,320	89	80	83	89	
Dec.	7.4	15.1	-0.3	40	-29	58	-41	1,790	92	86	86	89	
Year...	35.4	46.0	24.8	97	-39	104	-55	10,960	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ²	
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days	
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage					
in.	No.	in.	No.	in.	in.								
Jan.	0.01	³	5.7	9	0.58	0.60	S	19	11.5	97	0	31	
Feb.	0	0	6.4	10	0.64	0.52	SW	16	11.0	123	0	28	
Mar.	0.03	³	5.3	6	0.56	0.60	SE	18	11.0	191	³	31	
Apr.	0.47	4	3.6	4	0.83	0.65	NW	18	12.4	218	³	20	
May.	1.40	9	0.5	1	1.45	1.38	SE	17	12.4	267	1	9	
June.	2.73	11	T	³	2.73	2.15	NW	17	11.9	268	3	1	
July.	2.54	10	0	0	2.54	3.12	NW	17	10.9	338	7	0	
Aug.	1.63	10	0	0	1.63	2.90	SE	17	10.4	305	5	³	
Sept.	1.23	7	0.7	1	1.30	1.74	NW	19	11.7	213	³	6	
Oct.	0.67	5	2.2	2	0.89	0.68	S	22	11.7	169	0	19	
Nov.	0.07	1	6.2	8	0.69	0.60	S.W ⁴	19	11.0	94	0	29	
Dec.	0.01	³	5.5	9	0.56	0.81	S	20	10.1	84	0	31	
Year...	10.79	57	36.1	50	14.40	3.12	S	16	11.3	2,367	16	205	

¹ City data; except humidity and wind data from airport and combined temperature extreme data from city and airport.

² Average date of last Spring frost May 24; of first Fall frost Sept. 13.

than 0.5 days.

⁴ Two directions of equal prevalence.

³ Average less

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

SWIFT CURRENT, SASK.¹—50°17'N, 107°41'W.

ALTITUDE ABOVE M.S.L.: 2,677 FEET

Month	AIR TEMPERATURE								HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0500 M.S.T.	1100 M.S.T.	1700 M.S.T.	2300 M.S.T.	
		Maximum	Minimum	Maximum	Minimum	Highest Re- corded	Lowest Re- corded						
	°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.	
Jan.....	9.8	19.2	0.4	42	-28	59	-49	1,710	89	83	86	88	
Feb.....	12.4	22.1	2.8	45	-25	69	-54	1,490	92	86	89	93	
Mar.....	24.5	33.6	15.4	56	-12	72	-34	1,260	92	78	76	90	
Apr.....	40.7	52.4	29.1	75	11	92	-16	730	83	62	55	78	
May.....	52.5	65.5	39.4	86	24	98	10	400	81	53	50	73	
June.....	60.0	72.2	47.9	89	34	104	21	190	86	59	55	80	
July.....	67.2	81.2	53.2	96	41	107	33	50	82	53	46	75	
Aug.....	64.2	78.4	50.0	94	37	102	29	90	83	54	48	75	
Sept.....	54.0	67.1	41.0	88	24	97	8	340	82	60	54	75	
Oct.....	43.2	54.7	31.7	76	13	89	-16	680	80	61	62	76	
Nov.....	25.9	35.0	17.0	59	-8	77	-32	1,170	88	78	81	86	
Dec.....	15.0	23.9	6.2	47	-24	68	-39	1,550	90	85	89	88	
Year...	39.1	50.4	27.8	97	-34	107	-54	9,660	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUNSHINE	THUNDER	FREEZING TEMPERATURES ²	
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days	
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage					
	in.	No.	in.	No.	in.	in.							
Jan.....	0.04	1	7.4	11	0.78	0.52	W	34	15.6	95	0	31	
Feb.....	T	³	5.5	9	0.55	0.43	W	32	15.5	120	0	28	
Mar.....	0.05	1	5.7	9	0.62	1.32	W	24	15.4	157	0	29	
Apr.....	0.55	4	3.0	5	0.85	0.80	S,W ⁴	17	15.8	206	³	19	
May.....	1.61	9	0.6	1	1.67	1.19	W	17	15.0	259	2	8	
June....	2.97	12	0.1	³	2.98	1.36	W	19	14.2	269	3	1	
July....	2.13	9	0	0	2.13	2.28	W	21	13.3	339	7	0	
Aug....	1.84	9	0	0	1.84	1.82	W	21	13.2	294	7	³	
Sept....	1.11	7	1.7	1	1.28	1.36	W	23	14.4	198	1	4	
Oct.....	0.48	4	3.5	4	0.83	0.65	W	28	15.7	165	³	14	
Nov....	0.07	2	6.1	8	0.68	0.54	W	29	15.6	108	0	28	
Dec....	0.02	1	6.6	11	0.68	0.47	W	32	15.6	87	0	31	
Year...	10.87	59	40.2	59	14.89	2.28	W	25	14.9	2,297	20	193	

¹ Combined city and airport data.

² Average date of last Spring frost May 27; of first Fall frost Sept. 10.

³ Average less than 0.5 days.

⁴ Two directions of equal prevalence.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

CALGARY, ALTA.¹—51°06'N, 114°01'W.

ALTITUDE ABOVE M.S.L.: 3,540 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY				
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0500 M.S.T.	1100 M.S.T.	1700 M.S.T.	2300 M.S.T.	
		Maximum	Minimum	Maximum	Minimum	Highest Re- corded	Lowest Re- corded						
	°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.	
Jan.....	15.8	26.4	5.1	51	-23	61	-48	1,530	74	65	67	75	
Feb.....	17.3	28.2	6.4	53	-22	76	-49	1,350	79	73	70	81	
Mar.....	26.2	36.6	15.8	59	-10	75	-34	1,200	80	64	62	80	
Apr.....	39.4	51.5	27.2	73	11	85	-22	770	78	52	45	71	
May.....	50.1	62.8	37.4	80	25	90	12	460	78	51	46	70	
June....	56.2	67.9	44.4	85	34	95	26	270	82	54	50	75	
July....	62.4	76.2	48.7	91	39	97	31	110	82	54	46	74	
Aug.....	59.8	73.7	46.0	88	35	96	28	170	85	54	47	77	
Sept....	51.6	64.2	39.0	83	24	90	8	410	78	52	46	71	
Oct.....	42.1	54.0	30.2	76	11	85	-8	710	76	55	54	73	
Nov.....	27.9	38.3	17.5	62	-7	71	-31	1,110	75	60	64	73	
Dec.....	18.8	29.0	8.7	53	-19	67	-45	1,430	76	67	69	74	
Year...	39.0	50.7	27.2	92	-31	97	-49	9,520	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ²	
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days	
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage					
	in.	No.	in.	No.	in.	in.							
Jan.....	0.01	^s	5.4	7	0.55	0.80	W	22	10.0	106	0	30	
Feb.....	0.01	^s	6.5	8	0.66	1.09	W	19	9.6	126	0	28	
Mar.....	0.02	1	11.0	11	1.12	0.80	N,S ⁴	17	9.6	153	0	29	
Apr.....	0.41	3	8.5	6	1.26	1.80	SE	18	11.2	191	^s	22	
May.....	1.70	9	2.4	2	1.94	1.60	NW	20	11.1	242	1	10	
June....	3.46	12	0.2	^s	3.48	3.12	N,NW ⁴	19	10.3	236	4	^s	
July....	2.41	10	0	0	2.41	2.66	NW	19	9.2	315	9	^s	
Aug.....	1.96	10	T	^s	1.96	3.18	N	19	8.9	268	5	^s	
Sept....	1.39	7	4.0	2	1.79	1.20	NW	19	9.8	189	1	6	
Oct.....	0.38	4	5.1	4	0.89	0.94	S,W ⁴	18	9.8	164	0	17	
Nov.....	0.02	^s	7.7	7	0.79	1.11	W	19	9.5	114	0	27	
Dec.....	T	^s	6.2	7	0.62	0.55	W	21	9.9	96	0	31	
Year...	11.77	56	57.0	54	17.47	3.18	N	17	9.9	2,200	20	200	

¹ Combined city and airport data.

² Average date of last Spring frost June 3; of first Fall frost Sept. 3.

³ Average less than 0.5 days.

⁴ Two directions of equal prevalence.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

EDMONTON, ALTA.¹—53°34'N, 113°31'W.

ALTITUDE ABOVE M.S.L.: 2,219 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY				
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0500 M.S.T.	1100 M.S.T.	1700 M.S.T.	2300 M.S.T.	
		Maximum	Minimum	Maximum	Minimum	Highest Recorded	Lowest Recorded						
°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.		
Jan.....	7.7	16.7	−1.3	43	−32	57	−57	1,780	86	80	81	84	
Feb.....	11.2	20.7	1.7	48	−28	62	−57	1,520	89	82	76	87	
Mar....	23.4	32.9	13.8	55	−14	72	−40	1,290	87	70	63	83	
Apr....	39.6	50.8	28.5	73	10	90	−15	760	78	51	46	69	
May....	51.7	64.0	39.4	82	26	94	10	410	78	47	42	65	
June....	57.9	69.5	46.3	85	34	99	25	220	85	53	48	73	
July....	62.9	75.2	50.6	89	40	98	29	90	88	56	49	79	
Aug....	59.6	71.8	47.4	86	35	96	26	180	91	61	54	83	
Sept....	50.6	62.5	38.7	81	25	90	11	440	87	60	52	81	
Oct....	40.8	51.8	29.9	73	11	83	−15	750	76	82	59	55	
Nov....	24.2	32.6	15.9	55	−9	74	−44	1,220	85	74	75	83	
Dec....	11.6	19.6	3.6	45	−25	61	−55	1,660	89	84	84	89	
Year...	36.8	47.4	26.2	88	−39	99	−57	10,320	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ²	
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days	
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage					
	in.	No.	in.	No.	in.	in.							
Jan.....	0.02	1	8.8	11	0.90	0.60	S	24	7.7	81	0	31	
Feb.....	0.01	3	7.6	10	0.77	0.49	S	23	8.1	117	0	28	
Mar....	0.06	1	7.9	8	0.85	0.71	S	24	8.9	168	0	30	
Apr....	0.53	4	5.7	4	1.10	1.50	S	20	10.7	219	3	19	
May....	1.66	9	1.6	1	1.82	1.61	NW	20	10.4	253	1	6	
June....	2.97	8	T	3	2.97	2.52	NW	19	9.8	251	4	3	
July....	3.11	14	0	0	3.11	4.49	NW	24	8.9	302	9	0	
Aug....	2.27	11	0	0	2.27	1.92	NW	19	8.3	268	6	0	
Sept....	1.04	9	1.2	1	1.16	1.34	NW	22	8.8	188	1	5	
Oct....	0.50	6	3.4	3	0.84	0.70	S	27	8.9	154	0	18	
Nov....	0.12	2	7.9	8	0.91	1.57	S	24	8.0	97	0	28	
Dec....	0.05	1	8.8	11	0.93	0.83	S	28	7.4	75	0	31	
Year...	12.34	66	52.9	57	17.63	4.49	S	21	8.8	2,173	21	196	

¹ Combined city and airport data.

² Average date of last Spring frost May 29; of first Fall frost Sept. 6.

3 Average less than 0.5 days.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

GRANDE PRAIRIE, ALTA.¹—55°11'N, 118°53'W.

ALTITUDE ABOVE M.S.L.: 2,190 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0500	1100	1700	2300
		Maximum	Minimum	Maximum	Minimum	Highest Recorded	Lowest Recorded		M.S.T.	M.S.T.	M.S.T.	M.S.T.
		°F.	°F.	°F.	°F.	°F.	°F.		p.c.	p.c.	p.c.	p.c.
Jan....	5.6	16.1	-4.9	40	-41	50	-62	1,820	86	86	76	85
Feb....	6.4	16.8	-4.0	39	-37	53	-55	1,600	89	78	84	87
Mar....	20.4	31.2	9.6	48	-26	59	-45	1,380	72	77	68	83
Apr....	37.3	47.7	26.9	66	5	76	-32	830	85	64	58	77
May....	50.3	62.2	38.4	78	26	88	20	460	79	50	42	68
June....	56.4	68.0	44.8	82	35	89	29	250	83	55	48	73
July....	60.7	72.9	48.5	86	39	92	33	150	85	56	46	73
Aug....	58.5	70.8	46.2	85	33	94	27	220	86	58	47	77
Sept....	49.8	62.2	37.4	83	23	88	14	450	86	62	50	77
Oct....	39.3	49.9	28.7	72	7	84	-25	800	84	67	61	80
Nov....	21.8	30.1	13.5	53	11	72	-37	1,300	89	83	84	87
Dec....	9.3	18.7	-0.1	42	-30	56	-48	1,750	86	92	91	89
Year...	34.7	45.6	23.8	88	-46	94	-62	11,010	...	...	...	...
	PRECIPITATION						WIND		BRIGHT SUNSHINE	THUNDER	FREEZING TEMPERATURES ²	
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in.	No.	in.	No.	in.	in.						
Jan....	0.01	1	13.4	11	1.35	0.66	NW	26	8.0	78	0	31
Feb....	0.02	3	13.5	13	1.37	0.60	NW	24	8.3	109	0	28
Mar....	0.05	1	6.9	8	0.74	0.68	NW	22	8.7	157	3	30
Apr....	0.31	4	5.1	6	0.82	0.66	W	22	10.2	215	3	23
May....	1.48	8	0.4	3	1.52	1.05	W	22	10.9	266	1	6
June....	2.00	11	T	3	2.00	2.43	W	27	10.6	263	3	1
July....	2.48	12	0	0	2.48	1.82	W	30	10.2	299	4	0
Aug....	1.62	12	0.6	3	1.68	1.23	W	24	8.8	255	2	1
Sept....	1.16	9	1.2	1	1.28	0.88	W	25	9.9	180	3	5
Oct....	0.73	6	2.5	2	0.98	1.53	W	27	9.3	137	0	20
Nov....	0.22	3	10.0	10	1.22	0.93	W	21	7.5	80	0	29
Dec....	0.12	1	12.4	12	1.36	0.92	W	23	7.7	66	0	31
Year...	10.20	68	66.0	63	16.80	2.43	W	24	9.2	2,105	10	205

¹ Airport data; except bright sunshine from Beaverlodge, Alta. May 23; of first Fall frost Sept. 4.

² Average less than 0.5 days.

² Average date of last Spring frost

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

FORT NELSON, B.C.—58°50'N, 122°35'W.

ALTITUDE ABOVE M.S.L.: 1,230 FEET

Month	AIR TEMPERATURE								HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0400 P.S.T.	1000 P.S.T.	1600 P.S.T.	2000 P.S.T.	
		Maxi-mum	Mini-mum	Maxi-mum	Mini-mum	Highest Re-corded	Lowest Re-corded						
°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.		
Jan.....	-7.3	0.6	-15.2	31	-41	45	-61	2,200	90	88	86	90	
Feb.....	0.5	7.5	-6.5	39	-37	57	-55	1,870	92	91	83	91	
Mar.....	17.0	29.5	4.5	54	-22	62	-39	1,460	88	66	52	74	
Apr.....	34.4	46.3	22.5	65	0	76	-30	890	80	56	49	67	
May.....	50.2	62.0	38.4	80	27	89	18	460	80	51	42	61	
June....	58.3	69.9	46.7	83	37	93	30	220	84	55	45	66	
July.....	61.7	73.6	49.8	88	41	98	34	120	90	60	49	76	
Aug.....	58.7	71.0	46.4	85	34	93	29	220	91	65	48	79	
Sept....	48.4	59.7	37.1	79	25	91	12	460	91	75	54	82	
Oct.....	34.9	44.8	25.0	65	9	78	-18	920	82	78	65	82	
Nov.....	10.7	17.2	4.2	40	16	54	-41	1,680	93	90	84	90	
Dec.....	-4.8	1.8	-11.4	28	-35	46	-54	2,190	91	91	90	89	
Year...	30.2	40.3	20.1	90	-47	98	-61	12,690	...	...	...	...
	PRECIPITATION						WIND		BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ²		
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days	
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Per-cent-age					
	in.	No.	in.	No.	in.	in.							
Jan.....	T	3	8.6	9	0.86	0.47	S	36	3.9		0	31	
Feb.....	0.02	3	11.4	11	1.16	0.77	N	28	4.7		0	28	
Mar.....	0.01	3	7.0	8	0.71	0.83	N	27	5.6		0	31	
Apr.....	0.29	3	5.5	5	0.84	0.80	N	25	6.5		0	25	
May.....	1.34	9	1.0	1	1.44	1.36	N	23	6.4		1	7	
June....	2.53	10	0	0	2.53	2.05	N	19	6.1		4	3	
July....	2.36	11	0	0	2.36	1.87	S	21	5.6		5	0	
Aug.....	1.52	9	T	3	1.52	1.36	S	24	5.4		2	1	
Sept....	1.19	8	1.3	1	1.32	0.88	S	26	5.2		3	7	
Oct.....	0.42	4	6.1	5	1.03	0.63	S	31	4.8		0	25	
Nov.....	0.01	3	13.6	12	1.37	1.12	S	32	4.0		0	30	
Dec.....	T	3	12.3	11	1.23	1.39	S	33	3.5		0	31	
Year...	9.69	54	66.8	63	16.37	2.05	S	25	5.1		12	216	

¹ Airport data.
less than 0.5 days.

² Average date of last Spring frost May 24; of first Fall frost Sept. 2.

³ Average

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

PENTICTON, B.C.¹—49°28'N, 119°36'W.

ALTITUDE ABOVE M.S.L.: 1,121 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0400 P.S.T.	1000 P.S.T.	1600 P.S.T.	2200 P.S.T.
		Maximum	Minimum	Maximum	Minimum	Highest Recorded	Lowest Recorded					
	°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.
Jan.....	26.7	31.9	21.5	46	5	57	-16	1,190	84	80	77	82
Feb.....	31.0	38.1	24.0	52	7	64	-16	960	84	76	70	81
Mar.....	39.8	49.7	30.0	62	17	71	0	780	79	61	52	73
Apr.....	48.6	61.3	35.9	76	25	87	16	490	81	52	44	69
May.....	56.6	70.5	42.8	86	31	94	22	260	81	51	44	68
June.....	63.4	77.1	49.8	92	39	100	32	100	86	54	47	72
July.....	68.7	84.1	53.3	98	44	105	38	20	81	48	42	65
Aug.....	66.4	81.1	51.8	93	42	97	32	20	81	53	46	68
Sept.....	58.4	71.6	45.1	85	33	94	22	200	82	55	48	73
Oct.....	48.2	58.6	37.8	72	25	84	12	520	84	66	63	80
Nov.....	37.6	43.8	31.4	56	18	69	-2	820	84	77	76	82
Dec.....	31.0	36.0	25.9	50	8	60	-8	1,050	84	80	79	78
Year...	48.0	58.6	37.4	98	-1	105	-16	6,410	...	...	...	...
PRECIPITATION							WIND			BRIGHT SUNSHINE	THUNDER	FREEZING TEMPERATURES ²
Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days	
Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage					
in.	No.	in.	No.	in.	in.							
Jan.....	0.28	3	7.0	8	0.98	0.62	S	43	11.1	52	0	27
Feb.....	0.28	5	5.3	7	0.81	0.96	S	40	10.1	90	0	23
Mar.....	0.47	6	2.8	1	0.75	1.20	N,S ³	26	7.7	150	4	20
Apr.....	0.83	8	T	4	0.83	1.08	N	27	6.8	198	4	11
May.....	1.00	9	0	0	1.00	1.17	N	36	6.2	238	2	2
June.....	1.36	11	T	4	1.36	1.32	N	33	5.6	247	3	0
July.....	0.78	6	0	0	0.78	1.49	N	45	5.8	312	5	0
Aug.....	0.83	6	0	0	0.83	0.87	N	45	5.3	279	4	0
Sept.....	0.89	6	0	0	0.89	0.75	N	34	5.6	204	1	1
Oct.....	0.96	9	0.2	4	0.98	1.75	N	28	6.9	140	4	8
Nov.....	0.79	9	2.6	2	1.05	0.76	S	39	10.0	59	0	16
Dec.....	0.49	6	7.5	7	1.24	0.87	S	46	11.2	40	0	23
Year...	8.96	84	25.4	25	11.50	1.75	N	28	7.7	2,009	15	131

¹ Combined town and airport data; except bright sunshine from Summerland, B.C.
last Spring frost May 7; of first Fall frost Oct. 3.

² Average date of

³ Two directions of equal prevalence.

⁴ Average

less than 0.5 days.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

PRINCE GEORGE, B.C.¹—53°53'N, 122°41'W.

ALTITUDE ABOVE M.S.L.: 2,218 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0400 P.S.T.	1000 P.S.T.	1600 P.S.T.	2200 P.S.T.
		Maximum	Minimum	Maximum	Minimum	Highest Recorded	Lowest Recorded					
	°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.
Jan....	14.6	24.1	5.1	43	-31	54	-58	1,570	91	90	85	91
Feb....	19.4	30.7	8.0	49	-25	58	-52	1,320	88	85	78	88
Mar....	30.4	41.8	19.0	57	-7	68	-36	1,110	78	69	60	79
Apr....	40.6	53.5	27.7	71	11	86	-14	740	87	66	51	73
May....	50.0	64.6	35.5	82	22	95	12	480	86	64	45	70
June....	56.4	70.3	42.5	84	30	93	24	280	88	61	51	78
July....	59.6	74.2	45.1	89	34	102	28	200	94	65	52	83
Aug....	58.2	73.3	43.2	87	32	96	25	260	96	68	52	88
Sept....	50.4	64.3	36.5	80	23	92	6	460	93	71	57	88
Oct....	41.3	51.9	30.7	68	14	84	-14	750	90	77	67	86
Nov....	28.4	36.2	20.7	52	-4	62	-43	1,110	92	86	83	90
Dec....	18.2	25.9	10.4	45	-22	55	-56	1,440	92	87	92	92
Year...	38.9	50.9	27.0	91	-39	102	-58	9,720	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ²
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in.	No.	in.	No.	in.	in.						
Jan....	0.24	3	16.1	13	1.85	0.83	S	36	8.0	57	0	30
Feb....	0.19	3	12.9	11	1.48	0.90	S	40	7.9	88	0	27
Mar....	0.53	6	7.2	7	1.25	0.78	S	36	8.4	133	0	29
Apr....	0.81	10	1.5	2	0.96	0.76	S	32	8.5	175	³	20
May....	1.52	11	0.1	³	1.53	0.84	S	26	7.4	242	2	10
June....	2.20	14	T	³	2.20	1.28	S	33	7.0	240	4	2
July....	2.14	16	T	³	2.14	2.08	S	37	6.0	254	5	³
Aug....	2.25	13	0	0	2.25	1.97	S	38	5.9	244	4	2
Sept....	2.18	14	0.2	³	2.20	1.10	S	43	6.2	161	1	8
Oct....	1.93	15	1.9	2	2.12	0.76	S	47	7.6	100	³	18
Nov....	1.04	8	10.9	8	2.13	1.30	S	44	7.7	53	0	26
Dec....	0.48	4	15.7	12	2.05	1.14	S	44	8.1	38	0	30
Year...	15.51	117	66.5	55	22.16	2.08	S	38	7.4	1,785	16	202

¹ Combined town and airport data; except humidity and wind data from airport only.
of last Spring frost June 17; of first Fall frost Aug. 24.

² Average date

³ Average less than 0.5 days.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

PRINCE RUPERT, B.C.—54°17'N, 130°23'W.

ALTITUDE ABOVE M.S.L.: 170 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0400 P.S.T.	1000 P.S.T.	1600 P.S.T.	2200 P.S.T.
		Maxi-mum	Mini-mum	Maxi-mum	Mini-mum	Highest Re-corded	Lowest Re-corded					
°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.	
Jan.	35.7	40.4	31.0	50	17	64	—6	910	86	84	83	84
Feb.	36.5	41.8	31.2	51	18	66	2	810	87	89	79	87
Mar.	39.4	45.3	33.6	56	26	68	11	790	86	79	72	84
Apr.	43.4	50.2	36.7	62	30	71	22	650	87	77	70	84
May.	48.8	56.1	41.5	71	34	84	30	500	91	79	70	86
June.	53.4	60.4	46.3	73	40	88	35	350	91	83	75	89
July.	56.2	62.9	49.5	74	43	87	33	270	94	86	76	91
Aug.	57.4	64.2	50.5	76	44	86	39	240	95	87	76	92
Sept.	53.8	60.3	47.3	72	39	81	30	340	94	86	78	91
Oct.	47.8	53.2	42.3	63	33	71	22	510	89	85	81	88
Nov.	41.6	46.4	36.9	57	27	68	11	680	86	85	82	84
Dec.	36.8	41.2	32.4	51	19	63	1	860	87	86	86	87
Year ...	45.9	51.9	39.9	80	11	88	—6	6,910	...	...	...	...
	PRECIPITATION							WIND		BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ¹
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Per-cent-age				
	in.	No.	in.	No.	in.	in.						
Jan.	8.63	19	8.1	4	9.44	4.92	SE	44	8.5	40	0	16
Feb.	6.73	15	7.2	3	7.45	2.54	SE	43	7.6	59	0	13
Mar.	7.37	19	5.6	3	7.93	2.47	SE	45	7.4	81	0	13
Apr.	6.60	19	2.2	6	6.82	2.80	SE	46	7.4	103	0	4
May.	5.13	17	T	2	5.13	2.58	SE	32	4.8	138	2	2
June.	3.95	16	0	0	3.95	1.89	SE	27	3.9	125	0	0
July.	4.67	17	0	0	4.67	2.64	SE	29	3.5	125	0	0
Aug.	5.46	15	0	0	5.46	2.55	SE	34	3.8	125	2	0
Sept.	8.04	18	0	0	8.04	2.88	SE	40	5.2	97	2	0
Oct.	12.31	24	0.1	2	12.32	5.55	SE	54	7.9	54	0	1
Nov.	12.09	23	1.8	1	12.27	5.43	SE	48	8.3	40	0	7
Dec.	9.81	20	7.1	3	10.52	4.94	SE	49	8.6	31	0	15
Year ...	90.79	222	32.1	20	94.00	5.55	SE	41	6.4	1,018	2	69

¹ Average date of last Spring frost Apr. 19; of first Fall frost Nov. 3.

² Average less than 0.5 days.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

VANCOUVER, B.C.¹—49°17'N, 123°05'W.

ALTITUDE ABOVE M.S.L.: 127 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0400	1000	1600	2200
		Maximum	Minimum	Maximum	Minimum	Highest Recorded	Lowest Recorded		P.S.T.	P.S.T.	P.S.T.	P.S.T.
	°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.
Jan....	37.6	42.1	33.2	52	20	59	2	880	89	86	84	89
Feb....	40.0	45.9	34.1	55	23	61	8	720	90	82	79	89
Mar....	44.0	50.8	37.2	61	29	68	15	650	89	77	71	86
Apr....	49.8	58.0	41.6	70	33	79	27	470	88	74	67	83
May....	55.6	64.5	46.6	76	38	83	33	300	89	74	64	83
June....	60.8	69.7	51.8	82	45	92	35	140	88	72	63	82
July....	64.4	74.2	54.6	84	48	91	40	70	89	72	62	82
Aug....	64.1	73.8	54.4	84	48	92	39	70	92	74	65	86
Sept....	58.5	66.9	50.1	78	41	86	30	200	92	77	70	88
Oct....	51.7	58.1	45.3	70	35	77	21	430	92	82	79	90
Nov....	44.0	48.9	39.0	57	28	74	10	650	92	87	84	91
Dec....	39.5	43.8	35.2	54	21	60	8	810	93	89	89	92
Year...	50.8	58.1	43.6	87	14	92	2	5,390	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ²
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in.	No.	in.	No.	in.	in.						
Jan....	7.02	19	9.0	4	7.92	3.73	E	45	8.3	48	0	16
Feb....	5.46	16	5.8	3	6.04	2.85	E	40	8.4	80	0	12
Mar....	5.11	17	1.4	1	5.25	2.38	E	32	8.9	126	³	7
Apr....	3.59	14	0.4	³	3.63	2.21	E	26	8.7	168	³	1
May....	2.71	12	0	0	2.71	1.11	E	24	8.3	226	1	0
June....	2.13	11	0	0	2.13	1.93	E	26	8.0	223	1	0
July....	1.36	8	0	0	1.36	1.74	E	26	7.6	280	1	0
Aug....	1.63	7	0	0	1.63	2.10	E	28	7.6	254	1	0
Sept....	3.15	10	0	0	3.15	1.92	E	27	7.4	178	³	³
Oct....	6.59	16	0	0	6.59	2.93	E	35	7.7	110	³	1
Nov....	6.75	20	1.4	1	6.89	3.29	E	40	8.1	53	³	6
Dec....	8.88	22	6.5	3	9.53	2.87	E	43	8.4	38	0	13
Year...	54.38	172	24.5	12	56.83	3.73	E	33	8.1	1,784	4	56

¹ City data; except humidity, wind and thunder data from Sea Island airport.
Spring frost Apr. 1; of first Fall frost Nov. 5.

² Average date of last

³ Average less than 0.5 days.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

VICTORIA, B.C.¹—48°25'N, 123°19'W.

ALTITUDE ABOVE M.S.L.: 228 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0400 P.S.T.	1000 P.S.T.	1600 P.S.T.	2200 P.S.T.
		Maximum	Minimum	Maximum	Minimum	Highest Recorded	Lowest Recorded					
°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.	
Jan.....	39.2	42.8	35.6	51	25	56	-2	800	90	85	81	90
Feb.....	41.5	46.2	36.8	54	28	60	5	660	91	82	74	89
Mar....	45.0	50.4	39.5	60	33	69	17	620	91	75	68	87
Apr.....	49.2	55.7	42.7	67	36	75	24	470	93	72	65	85
May....	53.8	61.1	46.6	75	41	85	30	350	89	70	62	84
June....	57.4	64.9	50.0	80	46	95	36	230	89	69	62	84
July....	60.0	68.0	52.1	83	49	95	37	160	90	68	61	83
Aug....	60.2	67.9	52.4	82	49	91	37	150	92	70	62	85
Sept....	57.4	64.8	49.9	79	45	89	30	230	91	71	64	88
Oct.....	51.7	57.1	46.3	69	39	77	22	410	93	79	74	91
Nov....	45.1	49.0	41.2	57	34	66	14	600	92	84	82	91
Dec....	41.4	45.0	37.9	54	27	59	8	730	91	86	86	91
Year...	50.2	56.1	44.2	87	20	95	-2	5,410	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ²
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in.	No.	in.	No.	in.	in.						
Jan.....	3.63	17	4.2	3	4.05	3.05	N	27	12.2	66	*	9
Feb....	2.87	14	2.6	1	3.13	3.18	N	26	11.4	94	*	4
Mar....	2.10	15	0.5	1	2.15	1.24	W	22	11.5	148	0	1
Apr.....	1.16	11	0.1	*	1.17	0.82	W	28	11.3	197	*	*
May....	0.98	9	0	0	0.98	1.48	SW	33	11.3	252	1	0
June....	0.91	8	0	0	0.91	1.32	SW	43	11.8	263	1	0
July....	0.49	5	0	0	0.49	0.85	SW	47	11.5	322	*	0
Aug....	0.65	6	0	0	0.65	0.86	SW	43	10.3	287	*	0
Sept....	1.28	9	0	0	1.28	1.10	SW	27	8.6	205	*	0
Oct.....	2.90	14	0	0	2.90	1.67	N	23	9.3	130	*	0
Nov....	3.57	18	0.6	1	3.63	2.71	N	24	11.7	72	*	1
Dec....	4.63	20	2.1	1	4.85	3.19	N	27	12.4	57	0	5
Year...	25.17	146	10.1	7	26.19	3.19	SW	24	11.1	2,093	2	20

¹ Observatory data; except humidity data from Victoria (Patricia Bay) airport.
last Spring frost Feb. 28; of first Fall frost Dec. 7.

* Average less than 0.5 days.

² Average date of

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

AKLAVIK, N.W.T.—68°14'N, 135°00'W.

ALTITUDE ABOVE M.S.L.: 30 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0400 P.S.T.	1000 P.S.T.	1600 P.S.T.	2200 P.S.T.
		Maxi-mum	Mini-mum	Maxi-mum	Mini-mum	Highest Re-corded	Lowest Re-corded					
°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.	
Jan.	-18.2	-10.4	-25.9	18	-47	44	-59	2,580				
Feb.	-16.8	-9.4	-24.2	18	-46	49	-62	2,310				
Mar.	-8.8	0	-17.7	28	-39	45	-50	2,290				
Apr.	8.6	19.2	-2.0	43	-26	56	-44	1,690				
May.	31.1	39.7	22.5	62	3	77	-14	1,050	93	84	75	81
June.	49.0	58.2	39.7	78	27	86	20	480	87	78	68	74
July.	56.4	65.5	47.4	82	36	93	30	280	88	78	68	76
Aug.	50.2	58.4	42.0	76	32	88	25	460	92	86	77	87
Sept.	38.2	44.1	32.2	62	22	76	12	800	91	88	81	88
Oct.	19.8	24.6	14.9	41	-7	55	-22	1,400				
Nov.	-2.9	3.4	-9.2	26	-31	44	-50	2,040				
Dec.	-16.5	-9.5	-23.5	19	-44	46	-54	2,530				
Year ...	15.8	23.6	8.0	83	-51	93	-62	17,910	...	...	...	...
	PRECIPITATION							WIND		BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ¹
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in.	No.	in.	No.	in.	in.						
Jan.	0	0	6.6	7	0.66	0.80	S	25	6.0		0	31
Feb.	0	0	5.9	7	0.59	0.41	N,NW ²	20	6.4		0	28
Mar.	T	^s	4.4	5	0.44	0.60	N	26	7.5		0	31
Apr.	T	^s	6.0	6	0.60	0.54	N	36	7.7		0	30
May.	0.25	2	3.0	2	0.55	0.42	N	39	7.6		0	28
June.	0.63	5	2.1	1	0.84	1.17	N	38	8.0		^s	4
July.	1.39	10	T	^s	1.39	1.61	N	29	6.8		^s	^s
Aug.	1.32	13	1.2	^s	1.44	0.79	S	23	7.0		0	1
Sept.	0.60	9	3.4	4	0.94	0.47	N,NW ²	22	6.6		0	16
Oct.	0.07	1	9.0	8	0.97	0.74	NW	23	5.5		0	31
Nov.	0	0	8.7	8	0.87	0.60	S,NW ²	22	4.5		0	30
Dec.	0	0	4.8	6	0.48	0.50	S	21	4.2		0	31
Year ...	4.26	40	55.1	54	9.77	1.61	N	24	6.5		^s	261

¹ Average date of last Spring frost June 15; first Fall frost Aug. 20.

² Two directions of equal prevalence.

³ Average less than 0.5 days.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

ALERT, N.W.T.—82°30'N, 62°20'W.

ALTITUDE ABOVE M.S.L.: 205 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY				
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0100 E.S.T.	0700 E.S.T.	1300 E.S.T.	2000 E.S.T.	
		Maximum	Minimum	Maximum	Minimum	Highest Re-corded	Lowest Re-corded						
	°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.	
Jan.....	-28.0	-21.0	-35.0	4	-47	17	-54	2,880					
Feb.....	-27.5	-20.1	-34.8	13	-47	25	-53	2,610					
Mar.....	-27.1	-19.4	-34.8	1	-46	28	-53	2,860					
Apr.....	-9.8	-1.9	-17.6	21	-39	30	-50	2,240					
May.....	11.0	17.2	4.8	35	-11	47	-17	1,670	86	86	86	86	
June.....	31.6	36.4	26.8	52	15	57	10	1,000	82	80	79	80	
July.....	39.3	45.2	33.4	59	27	68	22	800	79	77	76	78	
Aug.....	33.5	37.9	29.0	53	16	59	5	980	87	86	83	84	
Sept.....	15.0	20.1	9.9	36	-8	39	-15	1,500	89	88	90	89	
Oct.....	-4.1	2.5	-10.6	20	-25	33	-32	2,140					
Nov.....	-14.6	-7.8	-21.3	15	-34	31	-39	2,390					
Dec.....	-22.1	-15.0	-29.1	4	-42	13	-51	2,700					
Year...	-0.2	6.2	-6.6	59	-51	68	-54	23,770	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ¹	
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days	
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage					
	in.	No.	in.	No.	in.	in.							
Jan.....	0	0	1.9	10	0.19	0.07	W	22	2.9		0	31	
Feb.....	0	0	2.1	8	0.21	0.20	W	26	3.6		0	28	
Mar.....	0	0	2.7	7	0.27	0.21	W	32	4.0		0	31	
Apr.....	0	0	2.2	7	0.22	0.13	W	31	4.5		0	30	
May.....	0	0	3.2	9	0.32	0.45	N	16	5.6		0	31	
June.....	0.30	2	3.2	6	0.62	0.73	N	20	6.9		0	25	
July.....	0.29	4	3.3	4	0.62	0.54	NE	26	8.1		0	16	
Aug.....	0.43	4	7.2	9	1.15	0.72	NE	19	6.5		0	23	
Sept.....	0.01	1	11.1	12	1.12	0.39	W	26	6.7		0	30	
Oct.....	T	2	6.9	10	0.69	0.80	W	34	6.3		0	31	
Nov.....	0	0	2.0	9	0.20	0.18	W	32	5.3		0	30	
Dec.....	0	0	3.0	13	0.30	0.25	W	28	4.1		0	31	
Year...	1.03	11	48.8	104	5.91	0.80	W	22	5.4		0	337	

¹ No appreciable frost-free period.

² Average less than 0.5 days

**Long-Term Averages and Extremes of Climatic Data for Representative
Canadian Stations—continued**

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

CAMBRIDGE BAY, N.W.T.—69°07'N, 105°01'W.

ALTITUDE ABOVE M.S.L.: 45 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY					
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree- Days Below 65°F.	0500 M.S.T.	1100 M.S.T.	1700 M.S.T.	2300 M.S.T.		
		Maxi- mum	Mini- mum	Maxi- mum	Mini- mum	Highest Re- corded	Lowest Re- corded							
	°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.		
Jan.....	-27.5	-20.5	-34.5	0	-47	21	-63	2,810						
Feb.....	-29.6	-22.5	-36.7	-1	-50	11	-59	2,640						
Mar.....	-18.2	-10.3	-26.1	10	-43	21	-52	2,630						
Apr.....	-9.3	-0.5	-18.1	23	-34	43	-42	2,170						
May.....	14.4	21.6	7.2	36	-14	45	-31	1,560						
June.....	34.4	40.2	28.6	56	15	72	6	880	93	85	84	92		
July....	46.4	54.0	38.8	66	33	75	30	540	93	77	79	87		
Aug....	44.1	50.1	38.1	64	30	76	16	640	95	84	82	91		
Sept....	30.2	33.9	26.5	50	14	58	7	1,010	95	84	86	94		
Oct....	11.4	17.6	5.2	33	-14	39	-25	1,670						
Nov.....	-10.0	-3.7	-16.3	17	-34	27	-44	2,240						
Dec.....	-20.6	-13.9	-27.3	7	-44	18	-57	2,700						
Year...	5.5	12.2	-1.2	67	-53	76	-63	21,490	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUN- SHINE	THUN- DER	FREEZING TEMPERA- TURES ¹		
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)			Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maxi- mum Fall in 24 Hours	Direc- tion	Per- cent- age						
	in.	No.	in.	No.	in.	in.								
Jan.....	0	0	3.4	3	0.34	0.47	W	32	10.8		0		31	
Feb.....	0	0	1.8	3	0.18	0.22	W	28	10.5		0		28	
Mar.....	0	0	2.2	5	0.22	0.23	N	22	11.4		0		31	
Apr.....	0	0	1.7	4	0.17	0.12	N	20	11.9		0		30	
May.....	0.01	²	2.7	5	0.28	0.21	E	20	12.0		²		31	
June.....	0.19	4	2.6	2	0.45	0.61	N	21	12.2		²		20	
July....	1.10	7	T	²	1.10	1.10	N	22	12.4		1		1	
Aug....	0.92	6	0.1	²	0.93	1.21	N	17	12.2		0		4	
Sept....	0.36	3	2.7	3	0.63	0.41	W	16	12.4		²		24	
Oct....	0.02	²	5.5	9	0.57	0.50	N	21	13.8		0		31	
Nov.....	0	0	5.0	6	0.50	0.47	W	20	11.5		0		30	
Dec.....	0	0	2.7	5	0.27	0.16	W	21	10.3		0		31	
Year...	2.60	20	30.4	45	5.64	1.21	W	19	11.8		1		292	

¹ Average date of last Spring frost June 28; of first Fall frost Aug. 13.

² Average less than 0.5 days.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

CORAL HARBOUR, N.W.T.—64°11'N, 83°22'W.

ALTITUDE ABOVE M.S.L.: 193 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0100 E.S.T.	0700 E.S.T.	1300 E.S.T.	1900 E.S.T.
		Maximum	Minimum	Maximum	Minimum	Highest Recorded	Lowest Recorded					
	°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.
Jan....	-22.9	-15.2	-30.6	8	-51	19	-58	2,780				
Feb....	-22.6	-14.9	-30.3	7	-49	30	-55	2,480				
Mar....	-11.3	-2.3	-20.3	19	-40	31	-51	2,410				
Apr....	1.1	10.8	-8.6	29	-26	40	-36	1,910				
May....	19.3	26.7	11.9	41	-13	48	-36	1,420	93	93	86	89
June....	35.0	41.0	29.0	58	19	67	11	890	92	86	78	81
July....	45.9	53.7	38.1	69	33	77	30	580	90	82	69	72
Aug....	45.0	52.4	37.6	67	29	79	26	610	90	87	69	74
Sept....	32.4	37.7	27.1	52	16	63	8	970	93	92	82	88
Oct....	17.1	23.8	10.4	35	-9	41	-20	1,450				
Nov....	3.1	10.9	-4.7	28	-26	35	-34	1,830				
Dec....	-11.1	-3.1	-19.1	20	-43	27	-53	2,340				
Year...	10.9	18.4	3.4	71	-53	79	-58	19,670	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ¹
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in	No	in.	No.	in.	in.						
Jan....	0	0	2.5	7	0.25	0.20	N	36	11.9		0	31
Feb....	0	0	2.8	6	0.28	0.31	N	32	12.0		0	28
Mar....	0	0	3.4	7	0.34	0.46	N	34	12.6		0	31
Apr....	0.11	²	4.8	8	0.59	0.97	N	29	12.6		0	30
May....	0.06	1	4.8	7	0.54	0.89	N	24	12.9		0	31
June....	0.79	6	1.2	3	0.91	0.83	N	18	11.9		0	20
July....	1.36	9	0	0	1.36	1.15	N	19	12.2		0	1
Aug....	1.46	9	T	²	1.46	1.08	N	22	12.5		²	5
Sept....	0.83	6	2.8	3	1.11	0.90	N	24	13.1		0	24
Oct....	0.07	1	8.6	11	0.93	0.68	N	28	14.9		0	31
Nov....	0.01	²	6.2	10	0.63	0.30	N	36	14.5		0	30
Dec....	T	²	4.4	9	0.44	0.34	N	38	13.0		0	31
Year...	4.69	32	41.5	71	8.84	1.15	N	29	12.8		2	293

¹ Average date of last Spring frost June 30; of first Fall frost Aug. 5.

² Average less than 0.5 days.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

FORT SIMPSON, N.W.T.—61°52'N, 121°21'W.

ALTITUDE ABOVE M.S.L.: 422 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY				
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0400 P.S.T.	1000 P.S.T.	1600 P.S.T.	2200 P.S.T.	
		Maximum	Minimum	Maximum	Minimum	Highest Re- corded	Lowest Re- corded						
°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.		
Jan.	-15.1	-6.8	-23.4	23	-48	53	-66	2,480					
Feb.	-9.4	0	-18.9	28	-46	60	-69	2,100					
Mar.	4.3	15.9	-7.3	39	-34	55	-52	1,880					
Apr.	25.4	37.0	13.9	60	-12	71	-39	1,190					
May.	44.6	55.4	33.8	77	22	95	-9	630	81	62	56	72	
June.	57.4	69.0	45.9	83	33	95	25	240	80	64	53	72	
July.	62.4	74.6	50.2	88	38	97	29	110	80	63	54	74	
Aug.	57.7	69.4	46.0	84	31	94	21	240	82	68	57	79	
Sept.	46.6	56.2	37.0	75	22	86	7	550	82	69	61	78	
Oct.	30.8	37.9	23.8	62	3	89	-18	1,060					
Nov.	6.0	12.6	-0.7	37	-25	56	-43	1,770					
Dec.	-11.0	-3.4	-18.7	19	-42	52	-64	2,360					
Year ...	25.0	34.8	15.1	89	-53	97	-69	14,610	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ¹	
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days	
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage					
	in.	No.	in.	No.	in.	in.							
Jan.	0	0	7.6	8	0.76	0.63	NW	41	6.6		0	31	
Feb.	0	0	6.2	7	0.62	0.30	NW	51	7.8		0	28	
Mar.	T	2	4.4	7	0.44	0.55	NW	41	7.9		0	31	
Apr.	0.13	1	3.7	5	0.50	0.89	NW	30	8.1		0	28	
May.	0.90	7	1.6	1	1.06	0.68	NW	26	8.0		2	10	
June.	1.39	9	0	0	1.39	2.42	NW	26	7.5		2	1	
July.	1.94	10	0	0	1.94	1.45	NW	29	7.1		3	0	
Aug.	1.63	9	T	2	1.63	1.69	SE	29	6.8		1	2	
Sept.	1.29	7	0.4	1	1.33	1.32	SE	33	8.1		2	9	
Oct.	0.32	3	4.5	5	0.77	0.70	SE	34	7.2		0	25	
Nov.	T	2	9.1	10	0.91	0.75	NW	38	7.8		0	30	
Dec.	0.01	2	7.7	9	0.78	0.62	NW	47	6.6		0	31	
Year ...	7.61	46	45.2	53	12.13	2.42	NW	34	7.5		6	226	

¹ Average date of last Spring frost June 4; of first Fall frost Aug. 28.² Average less than 0.5 days.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

FROBISHER BAY, N.W.T.—63°45'N, 68°34'W.

ALTITUDE ABOVE M.S.L.: 68 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0100 E.S.T.	0700 E.S.T.	1300 E.S.T.	1900 E.S.T.
		Maximum	Minimum	Maximum	Minimum	Highest Recorded	Lowest Recorded					
°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.	
Jan.....	-15.8	-9.1	-22.5	19	-42	34	-49	2,560				
Feb.....	-15.3	-7.8	-22.8	16	-41	38	-49	2,280				
Mar.....	-5.6	3.2	-14.4	25	-35	39	-43	2,230				
Apr.....	5.8	13.7	-2.1	33	-20	41	-29	1,690				
May.....	24.3	30.6	18.0	44	-4	56	-15	1,250				
June.....	37.7	43.2	32.2	57	27	71	17	800	82	79	75	79
July.....	45.7	52.5	38.9	67	32	76	30	600	82	81	70	72
Aug.....	44.5	50.4	38.6	62	32	74	30	650	84	83	70	76
Sept.....	35.4	39.8	31.0	50	22	57	5	880	82	84	74	82
Oct.....	24.0	29.0	19.0	39	3	45	-6	1,280				
Nov.....	12.3	17.9	6.7	34	-16	42	-32	1,580				
Dec.....	-3.5	2.3	-9.3	25	-32	34	-44	2,120				
Year...	15.8	22.1	9.4	67	-44	76	-49	17,920	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ¹
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in.	No.	in.	No.	in.	in.						
Jan.....	0	0	7.2	6	0.72	1.60	NW	30	7.7		0	31
Feb.....	0	0	9.1	7	0.91	0.99	NW	23	8.7		0	28
Mar.....	T	2	8.1	8	0.81	0.94	NW	25	8.6		0	31
Apr.....	0.18	2	6.0	7	0.78	0.48	NW	42	11.3		0	30
May.....	0.16	1	6.0	4	0.76	0.44	NW	28	13.2		0	29
June....	0.85	6	1.8	2	1.03	1.01	SE	29	12.8		0	14
July....	1.61	11	T	2	1.61	1.24	SE	42	7.8		2	1
Aug....	2.02	13	T	2	2.02	1.14	SE	32	8.7		0	1
Sept....	1.22	7	4.9	5	1.71	1.06	SE	28	10.1		0	16
Oct.....	0.17	1	9.3	11	1.10	0.74	NW	33	14.5		0	31
Nov....	0.01	2	10.9	13	1.10	0.96	NW	38	11.6		0	30
Dec....	T	2	9.8	9	0.98	0.86	NW	34	9.9		0	31
Year...	6.22	41	73.1	72	13.53	1.60	NW	29	10.4		2	273

Average date of last Spring frost June 24; of first Fall frost Aug. 27.

¹ Average less than 0.5 days.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

RESOLUTE, N.W.T.—74°43'N, 94°59'W.

ALTITUDE ABOVE M.S.L.: 209 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.				
		Maximum	Minimum	Maximum	Minimum	Highest Recorded	Lowest Recorded		0000 C.S.T.	0600 C.S.T.	1200 C.S.T.	1800 C.S.T.
	°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.
Jan.....	-28.2	-21.6	-34.7	0	-47	23	-53	2,890				
Feb.....	-30.3	-23.7	-36.8	-3	-51	6	-57	2,730				
Mar.....	-23.5	-16.5	-30.5	7	-48	20	-61	2,720				
Apr.....	-7.4	0.4	-15.2	19	-33	30	-40	2,170				
May.....	13.5	19.6	7.4	33	-11	40	-20	1,550	91	92	89	88
June.....	32.6	36.7	28.4	47	15	57	8	970	90	89	83	84
July.....	39.7	44.6	34.8	57	30	60	29	780	88	89	80	80
Aug.....	36.8	41.1	32.5	52	25	59	17	860	91	90	85	85
Sept.....	23.3	27.1	19.5	37	4	42	0	1,240	90	93	91	91
Oct.....	5.8	11.6	0	26	-18	32	-30	1,810				
Nov.....	-10.1	-3.6	-16.5	17	-32	27	-43	2,220				
Dec.....	-20.8	-14.3	-27.3	3	-43	17	-51	2,660				
Year...	2.6	8.4	-3.2	57	-54	60	-61	22,600	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ¹
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in.	No.	in.	No.	in.	in.						
Jan.....	0	0	0.9	3	0.09	0.08	NW	44	10.1	0	0	31
Feb.....	0	0	1.0	4	0.10	0.06	NW	37	9.6	29	0	28
Mar.....	0	0	1.3	5	0.13	0.10	NW	30	9.6	172	0	31
Apr.....	T	2	2.4	6	0.24	0.20	NW	34	9.6	266	0	30
May.....	T	2	3.8	11	0.38	0.34	NW	28	11.0	244	0	31
June.....	0.38	3	2.0	6	0.58	0.77	SE,NW ²	23	12.1	219	0	21
July.....	0.91	10	0.6	1	0.97	0.71	NW	25	12.1	270	0	8
Aug.....	1.03	7	2.2	4	1.25	0.97	NW	30	11.1	181	0	16
Sept.....	0.16	2	4.6	10	0.62	0.37	NW	29	12.0	61	0	30
Oct.....	0	0	5.5	12	0.55	0.34	NW	29	12.7	28	0	31
Nov.....	0	0	2.5	8	0.25	0.18	NW	28	10.2	2	0	30
Dec.....	0	0	1.2	4	0.12	0.08	NW	31	9.0	0	0	31
Year...	2.48	22	28.0	74	5.28	0.97	NW	31	10.8	1,472	0	318

¹ No appreciable frost-free period.

² Average less than 0.5 days.

³ Two directions of equal prevalence.

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—continued

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

WHITEHORSE, Y.T.¹—60°43'N, 135°04'W.

ALTITUDE ABOVE M.S.L.: 2,289 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0300 Y.S.T.	0900 Y.S.T.	1500 Y.S.T.	2100 Y.S.T.
		Maximum	Minimum	Maximum	Minimum	Highest Re- corded	Lowest Re- corded					
°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.	
Jan.....	5.2	13.0	-2.7	38	-36	47	-62	1,850	86	86	79	86
Feb.....	6.8	15.9	-2.2	41	-38	50	-59	1,640	88	87	77	85
Mar.....	21.3	31.0	11.6	43	-16	51	-37	1,350	82	76	63	76
Apr.....	31.8	41.2	22.3	52	-2	59	-15	1,000	79	60	49	66
May.....	45.5	57.2	33.8	73	22	86	19	600	75	51	41	58
June.....	54.6	66.5	42.7	80	31	89	28	310	76	54	43	54
July....	56.2	67.2	45.3	80	34	91	29	280	80	60	49	63
Aug.....	53.6	64.5	42.7	79	29	86	17	350	82	67	50	67
Sept....	46.0	54.7	37.2	70	22	80	14	570	84	74	56	78
Oct.....	34.4	41.0	27.9	55	8	59	-12	940	79	75	65	75
Nov.....	14.6	20.8	8.4	43	-22	51	-43	1,510	87	86	82	85
Dec.....	3.2	10.4	-4.0	35	-35	47	-54	1,900	89	87	86	88
Year...	31.1	40.3	21.9	83	-51	91	-62	12,300	...	...	...	...
	PRECIPITATION						WIND			BRIGHT SUN-SHINE	THUNDER	FREEZING TEMPERATURES ²
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in.	No.	in.	No.	in.	in.						
Jan.....	T	3	6.4	11	0.64	0.37	S	29	8.6		0	31
Feb.....	T	3	4.7	9	0.47	0.41	S	33	8.8		0	28
Mar.....	T	3	6.0	7	0.60	0.80	S	31	9.1		0	30
Apr.....	0.02	1	3.9	5	0.41	0.56	S	31	8.7		0	27
May.....	0.49	5	0.8	1	0.57	0.48	SE	34	8.7		0	13
June....	1.00	8	0	0	1.00	0.82	SE	30	8.0		1	1
July....	1.63	13	0	0	1.63	0.83	SE	36	7.4		2	3
Aug....	1.52	10	0.1	3	1.53	1.21	SE	33	7.8		1	2
Sept....	1.25	10	0.9	1	1.34	0.85	S, SE ⁴	31	9.1		0	7
Oct.....	0.30	4	4.1	4	0.71	0.47	S	38	10.4		0	20
Nov.....	0.08	1	9.2	12	1.00	0.45	S	31	9.0		0	29
Dec....	0.01	3	7.6	11	0.77	0.42	S	30	8.7		0	31
Year...	6.30	52	43.7	61	10.67	1.21	S	29	8.7		4	219

¹ Airport data. less than 0.5 days.

² Average date of last Spring frost June 10; of first Fall frost Aug. 27.

⁴ Two directions of equal prevalence.

³ Average

Long-Term Averages and Extremes of Climatic Data for Representative Canadian Stations—concluded

NOTE.—For full explanation of terms used and observing methods see pp. 31-32.

YELLOWKNIFE, N.W.T.¹—62°28'N, 114°27'W.

ALTITUDE ABOVE M.S.L.: 682 FEET

Month	AIR TEMPERATURE							HEATING FACTOR	RELATIVE HUMIDITY			
	Mean Daily	Mean of Daily		Mean of Monthly		Absolute Extreme		Degree-Days Below 65°F.	0500	1100	1700	2300
		Maximum	Minimum	Maximum	Minimum	Highest Recorded	Lowest Recorded		M.S.T.	M.S.T.	M.S.T.	M.S.T.
	°F.	°F.	°F.	°F.	°F.	°F.	°F.	No.	p.c.	p.c.	p.c.	p.c.
Jan....	-14.7	-6.5	-22.9	17	-48	37	-60	2,570				
Feb....	-14.2	-5.3	-23.1	15	-48	43	-60	2,270				
Mar....	1.4	11.4	-8.6	33	-38	42	-47	2,020				
Apr....	17.3	28.1	6.5	52	-20	60	-38	1,410				
May....	38.9	47.8	30.0	66	17	79	-4	790	86	72	65	80
June....	53.3	62.1	44.5	77	34	85	28	370	80	61	57	72
July....	60.9	69.5	52.3	81	42	86	33	160	82	61	56	73
Aug....	56.7	64.5	48.9	79	38	86	34	250	88	70	64	80
Sept....	44.9	51.1	38.7	67	24	79	18	580	88	77	71	84
Oct....	31.0	36.1	25.9	54	7	65	-9	1,060				
Nov....	7.2	13.8	0.6	34	-27	46	-43	1,740				
Dec....	-12.9	-5.2	-20.6	17	-42	37	-55	2,420				
Year...	22.5	30.6	14.4	83	-51	86	-60	15,640	...	...	...	...
	PRECIPITATION						WIND		BRIGHT SUNSHINE	THUNDER	FREEZING TEMPERATURES ²	
	Rain		Snow		Total (water)		Most Prevalent		Average Speed (miles per hour)	Mean No. of Hours	Mean No. of Days	Mean No. of Days
	Mean Amount	Days	Mean Amount	Days	Mean Amount	Maximum Fall in 24 Hours	Direction	Percentage				
	in.	No.	in.	No.	in.	in.						
Jan....	0	0	5.4	8	0.54	0.49	N	33	8.0		0	31
Feb....	0	0	4.6	8	0.46	0.31	E	29	9.2		0	28
Mar....	T	3	3.9	7	0.39	0.43	E	27	10.7		0	31
Apr....	0.10	1	2.6	4	0.36	0.30	N	25	11.6		0	29
May....	0.52	5	0.7	3	0.59	1.34	E	23	10.5		0	20
June....	0.73	6	T	3	0.73	0.79	NE	21	10.4		1	1
July....	1.15	9	T	3	1.15	1.11	N	20	10.5		2	0
Aug....	1.02	9	0	0	1.02	1.24	SE	20	10.2		1	0
Sept....	0.90	8	0.2	3	0.92	0.95	N	22	10.4		3	5
Oct....	0.58	5	4.1	5	0.99	0.61	E	25	11.7		0	23
Nov....	T	3	6.9	10	0.69	0.48	E	29	9.3		0	30
Dec....	T	3	6.1	11	0.61	0.33	E	30	8.6		0	31
Year...	5.00	43	34.5	53	8.45	1.34	E	21	10.1		4	229

¹ Airport data. less than 0.5 days.

² Average date of last Spring frost May 31; of first Fall frost Sept. 21.

³ Average

Section 2.—Meteorological Observing Stations in Canada*

In 1959, official meteorological observations were taken and recorded at some 1,828 weather reporting stations in Canada. There are several different classes of stations, ranging from the first-order reporting stations at airports where hourly observations of all aspects of the weather are recorded, to the co-operative precipitation observing stations where a volunteer observer makes daily observations of rainfall and snowfall.

The official recording of weather observations in Canada began early in 1840. Although there were some scattered weather records prior to that date, it was at the Toronto Observatory, established by the British Government, that the first scientifically precise Canadian weather observations were recorded. Several additional observing stations were established in the 1860's after control of meteorological work had passed into local governmental hands and a national meteorological service was organized in 1871. By 1876 there were more than 100 stations, 15 of them reporting daily by telegraph to Toronto for forecasting purposes.

Since then, the number of meteorological observing stations has grown steadily. As the mid-west opened up around the turn of the century, they spread into that area and during the past three decades into the sub-Arctic and Arctic regions. At the same time the coverage has improved in the older portions of southeastern Canada. While there are vast areas of Canada where the weather stations are several hundred miles apart, most of the settled portions of the country are represented by first-order hourly reporting stations every 100 miles or so, and by co-operative climatological observing stations at least every 25 miles.

Of the 1,828 weather reporting stations across Canada about 250 are classified as first-order synoptic stations. At most of these stations complete weather observations are made every six hours and at a large percentage of them only slightly less complete observations for aviation forecasts every hour. These weather data, including information on temperature, precipitation, pressure, wind, humidity, cloud and visibility, are sent first by radio and teletype to the different weather offices across the Continent to be used for weather forecasting purposes, and at the end of the month the manuscript reports are dispatched by mail to Meteorological Headquarters for use in compiling climatic statistics. At some 90 of these observing stations, personnel of the Telecommunications Branch of the Department of Transport take weather observations as part of their scheduled duties, while 35 stations are operated in a similar manner by the different Armed Services. Seventy stations are operated by Meteorological Branch personnel and the remainder of the stations are operated under contract, mainly by various transportation and communications companies.

About 1,020 weather observing stations in Canada are classified as climatological stations where the observers record temperature extremes and precipitation once or twice daily and send in monthly data sheets. Most of these climatological observers serve on a voluntary basis and willingly spend several hours a month on their hobby. These observers come from all walks of life—farmers, business men, clergymen, retired people, etc. In addition, many governmental and industrial organizations such as agricultural experimental farms and power companies have incorporated brief climatological duties into the general work of some of their employees. These climatological stations have contributed much useful information on temperature and precipitation for publication by the Meteorological Branch.

There are about 510 stations classified as precipitation stations where rainfall and snowfall only are observed and recorded. Since precipitation varies more rapidly than temperature over short distances, a dense network of these stations is required, especially in large urban areas. Finally, there are about 50 miscellaneous stations where observations of wind, sunshine and temperature are taken for special purposes. In all, the total number of weather stations in Canada has been growing at a rate of more than fifty a year for the past decade and thus a steadily increasing climatic intelligence is assisting Canadians in all economic pursuits.

* Prepared by the Meteorological Branch, Department of Transport, Toronto.

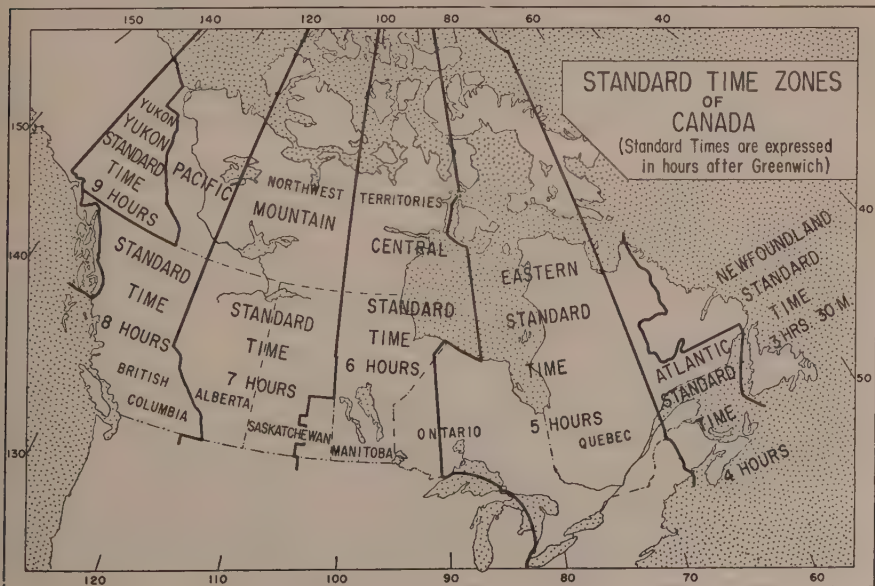
Section 3.—Standard Time and Time Zones

Standard time, which was adopted at a World Conference held at Washington, D.C., in 1884, sets the number of time zones in the world at 24, each zone extending over one twenty-fourth of the surface of the earth and including all the territory between two meridians 15° longitude apart. The basis of world time is Greenwich time and all other time zones are a definite number of hours behind Greenwich.

Canada has seven time zones, the most easterly being Newfoundland standard time, three hours and thirty minutes behind Greenwich time. In the west, Pacific standard time, used throughout British Columbia and part of the Northwest Territories, is eight hours behind Greenwich, and Yukon standard time, used throughout the Yukon Territory, is nine hours behind Greenwich. Some municipalities adopt the time used by the local railways which, in certain cases, differs from the standard. There are also villages that adopt such time as seems best to suit their convenience but in general the legal boundaries of the different time zones are actually in use.

Daylight Saving Time.—For some years before World War I there was active propaganda, particularly in the cities, for the use during the summer months of an earlier time usually referred to as 'daylight saving time', one hour ahead of standard time. It was considered from the economic as well as from the health point of view that people in industrial towns and cities would gain by having longer periods of sunlight at their disposal for recreation. Canada adopted daylight saving time in 1918 but the Canadian Act lapsed at the end of that year. Since that date, however, most cities and towns have adopted daylight saving for varying periods in the summer months.

Legal Authority for the Time Zones.—Most of the regulations made in Canada concerning standard time have been passed by the provincial legislatures and the Northwest Territories Council. Legislation, besides determining the boundaries of zones, regulates such matters as the times of coming into effect or expiration of Acts, ordinances, contracts and agreements, times of opening and closing registration offices, law courts, post offices and other public offices, times of open or close seasons for hunting and fishing, and times of opening and closing business houses and places of amusement.



PART V.—GEOPHYSICS AND ASTRONOMY

Section 1.—Geophysics

Geophysics began with the observations made by early navigators of the weather, ocean tides and the lodestone. These studies gradually developed into modern meteorology, physical oceanography and geomagnetism. To them were added other physical studies of the earth so that geophysics now includes also seismology—the study of earthquakes; hydrology—the study of waters in rivers, lakes, glaciers and underground (but not in the oceans); volcanology—the study of volcanoes and the earth's heat; tectonophysics—the study of the forces that build mountains and slowly cause changes in level of land and sea; the study of the earth's gravity; and several related studies such as the determination of the ages of ancient rocks and minerals from their content of radioactive elements. In addition, magnetic, electrical, gravitational, seismic and radioactive methods of geophysical prospecting are used to direct drilling in almost all the searches going on in Canada for oil and gas. Both airborne and ground devices are widely used by mining companies to prospect for metals.

The Dominion Observatory and the Geological Survey at Ottawa and the Physics Department of the University of Toronto are carrying out major programs of geophysical research. Several other universities across the country and various provincial governments are also doing geophysical work while the major oil companies as well as many other prospecting establishments have developed geophysical techniques as their most effective approach to the problem of finding oil fields and mineral deposits. A detailed study of the operations of the Geological Survey is given at pp. 13-19 of this volume.

Section 2.—Astronomy

The modern era of astronomy in Canada may be said to have begun in 1905 with the completion of the Dominion Observatory at Ottawa, the national observatory of Canada. Prior to that an astronomical observatory established in 1851 at Fredericton, N.B., was used for a short time to determine the longitude of that centre and for general astronomical purposes; it has been rehabilitated as a historic monument. Other small observatories were established, one at Quebec City in 1854 and one at Kingston in 1875. Astronomical instruments were to be associated with the Magnetic Observatory built by the British Government at Toronto in 1839 but there is no record of them being set up until 1881. A small observatory established at McGill University in 1879 was used for many years for time observations.

Today the science of astrophysics is carried on mainly by three Canadian institutions: the Dominion Observatory at Ottawa, Ont., the Dominion Astrophysical Observatory at Victoria, B.C., both of which are administered by the Department of Mines and Technical Surveys, and the David Dunlap Observatory associated with the University of Toronto. Of the two government institutions, the Dominion Observatory at Ottawa specializes mainly in the astronomy of position, in solar physics, in meteoric astronomy and in various branches of geophysical work, while the major effort in astrophysics is concentrated at the Dominion Astrophysical Observatory at Victoria. A new observatory for the study of radio astronomy is being erected at White Lake near Penticton, B.C., and will be jointly operated by the Dominion Observatory and the Dominion Astrophysical Observatory. The David Dunlap Observatory, founded in 1935, is equipped with very fine astrophysical instruments of a kind similar to those in use at Victoria. It performs not only the functions of a privately financed and administered research institution but is also the nucleus of the Department of Astronomy at Toronto University. In addition to the work of these three major institutions and a number of smaller observatories, investigations in the field of meteoric astronomy and radio astronomy are conducted by the National Research Council. Research in the field of space is covered in the Education and Research Chapter, Part III, Section 3.

CHAPTER II.—CONSTITUTION AND GOVERNMENT

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NOTE.—The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

PART I.—CONSTITUTION OF CANADA

The Canadian federal state was established by the British North America Act, 1867, which united the three British North American provinces of Canada, New Brunswick and Nova Scotia into one country, divided into four provinces, namely, Ontario, Quebec, New Brunswick and Nova Scotia. British Columbia entered the Union in 1871 and Prince Edward Island in 1873. The Province of Manitoba was created in 1870 and the Provinces of Saskatchewan and Alberta in 1905 out of portions of the territories formerly held by the Hudson's Bay Company which had been admitted to the Union in 1870. Newfoundland entered the Union in 1949. Canada now consists of ten provinces and two territories known as the Yukon Territory and the Northwest Territories.

The British North America Act of 1867 divided both legislative and executive authority between Canada and the provinces. Judicial authority was not similarly divided, federal and provincial courts having jurisdiction with respect to both federal and provincial laws.

Although the British North America Act of 1867 and its subsequent amendments are popularly regarded as the Constitution of Canada, it is not an exhaustive statement of the laws and rules by which Canada is governed. The Constitution of Canada in its broadest sense includes other statutes of the United Kingdom Parliament (e.g., the Statute of Westminster, 1931), statutes of the Parliament of Canada relating to such matters as the succession to the Throne, the demise of the Crown, the Governor General, the Senate, the House of Commons, electoral districts, elections, Royal Style and Titles, and also statutes of provincial legislatures relating to provincial government and provincial legislative assemblies. Other written instruments such as the Royal Proclamation of 1763, early instructions to Governors, Letters Patent creating the offices of Governor and Governor General, and Orders in Council passed pursuant to the British North America

Act also form part of the Canadian constitutional system. In addition the Constitution of Canada includes well-established usages and conventions. The preamble to the British North America Act states that it was the desire of the original provinces to be united "with a constitution similar in principle to that of the United Kingdom" and, accordingly, many of the usages and conventions of government that have been developed in the United Kingdom over the centuries are followed in Canada. For example, the Cabinet system of responsible government as developed in the United Kingdom obtains in Canada although no mention thereof is made in the British North America Act.

No provision was made in the British North America Act of 1867 for amendment thereof by any legislative authority in Canada but both the Parliament of Canada and the provincial legislatures were given legislative jurisdiction with respect to some matters relating to government. Thus, for example, the Parliament of Canada was given jurisdiction with respect to the establishment of electoral districts and election laws and the privileges and immunities of Members of the House of Commons and the Senate, and each provincial legislature was empowered to amend the constitution of the province except as regards the office of Lieutenant-Governor. By an amendment to the British North America Act passed in 1949 the authority of the Parliament of Canada to legislate with respect to constitutional matters was considerably enlarged and it may now amend the Constitution of Canada except as regards the legislative authority of the provinces, the rights and privileges of provincial legislatures or governments, schools, the use of the English or the French language, and the duration of the House of Commons other than in time of real or apprehended war, invasion or insurrection.

Canada's Status in the Commonwealth of Nations.*—The several stages in the development of the status of Canada have been authoritatively described in the reports of successive Imperial Conferences including that held at London in 1926 which defined the group of self-governing communities consisting of the United Kingdom and the Dominions as "autonomous communities within the British Empire, equal in status, in no way subordinate one to another in any aspect of their domestic or external affairs, though united by a common allegiance to the Crown, and freely associated as members of the British Commonwealth of Nations". That Conference also recognized that, as a consequence of this equality of status, the Governor General of a Dominion "is the representative of the Crown, holding in all essential respects the same position in relation to the administration of public affairs in the Dominion as is held by His Majesty the King in Great Britain", and that "it is the right of the Government of each Dominion to advise the Crown in all matters relating to its own affairs". Simultaneously with this change in the constitutional relationship between the several parts of the British Commonwealth of Nations there developed as a complementary aspect of nationhood the assumption by the several Dominions of further responsibilities and rights of sovereign States in their relations with other members of the community of nations. Membership in the League of Nations and more recently in the United Nations, the exercise of treaty-making powers and the establishment of separate diplomatic representation in foreign countries have characterized this phase in the growth of Canada. More explicit recognition of the implications of the principles of equality of status was accorded in the Statute of Westminster of 1931 which provided for the removal of the remaining limitations on the legislative autonomy of the Commonwealth nations.

Thus Canada, under the Crown, has equality of status with the United Kingdom and the other Commonwealth nations in both domestic and foreign affairs; its Government advises the Crown in the person of the Governor General on all matters relating to Canada. Canada has membership in the United Nations; makes its own treaties; appoints its own ambassadors and other representatives abroad; levies its own taxes; makes its own laws which are executed by a government dependent on the will of a majority of the people; and maintains its own naval, military and air forces. In short, Canada has achieved full status of democratic nationhood within the Commonwealth of Nations.

* A more detailed account is given in the 1952-53 Year Book, pp. 101-104.

1.—Provinces and Territories of Canada, Dates of Admission to Confederation, Legislative Processes by which Admission was Effected, Present Area and Seat of Government

Province, Territory or District	Date of Admission or Creation	Legislative Process	Present Area (sq. miles)	Seat of Provincial or Territorial Government
Ontario ¹	July 1, 1867	} Act of Imperial Parliament—The British North America Act, 1867 (U.K. Stat. 1867, c. 3) and Imperial Order in Council, May 22, 1867.	412,582	Toronto
Quebec ²	July 1, 1867		594,860	Quebec
Nova Scotia.....	July 1, 1867		21,425	Halifax
New Brunswick.....	July 1, 1867		28,354	Fredericton
Manitoba ³	July 15, 1870	Manitoba Act, 1870 (SC 1870, c. 3) and Imperial Order in Council, June 23, 1870.	251,000	Winnipeg
British Columbia.....	July 20, 1871	Imperial Order in Council, May 16, 1871..	366,255	Victoria
Prince Edward Island....	July 1, 1873	Imperial Order in Council, June 26, 1873...	2,184	Charlotte- town
Saskatchewan ⁴	Sept. 1, 1905	Saskatchewan Act, 1905 (SC 1905, c. 42)..	251,700	Regina
Alberta ⁴	Sept. 1, 1905	Alberta Act, 1905 (SC 1905, c. 3).....	255,285	Edmonton
Newfoundland.....	Mar. 31, 1949	The British North America Act, 1949 (U.K. Stat. 1949, c. 22).....	156,185	St. John's
Northwest Territories ⁵ ...	July 15, 1870	Act of Imperial Parliament—Rupert's Land Act, 1868 (U.K. Stat. 1868, c. 105), and Imperial Order in Council, June 23, 1870.....	1,304,903	} Ottawa ⁷
Mackenzie ⁶	Jan. 1, 1920	} Order in Council, Mar. 16, 1918.....	527,490	
Keewatin ⁶	Jan. 1, 1920		223,160	
Franklin ⁶	Jan. 1, 1920		549,253	
Yukon Territory ⁸	June 13, 1898	Yukon Territory Act, 1898 (SC 1898, c. 6)..	207,076	Whitehorse
Canada			3,851,809	

¹ The area of Ontario was extended by the Ontario Boundaries Extension Act, 1912 (SC 1912, c. 40).

² Extended by Quebec Boundaries Extension Act, 1912 (SC 1912, c. 45) and diminished Mar. 1, 1927 in consequence of the Award of the Judicial Committee of the British Privy Council whereby approximately 112,000 sq. miles of territory (formerly considered as part of Quebec) was assigned to Newfoundland.

³ Extended by the Extension of Boundaries Act of Manitoba, 1881 and the Manitoba Boundaries Extension Act, 1912 (SC 1912, c. 32).

⁴ Saskatchewan and Alberta created as provinces in 1905 from the area formerly comprised in the provisional districts of Assiniboia, Athabasca, Alberta and Saskatchewan established May 17, 1882 by minute of Canadian Privy Council concurred in by Dominion Parliament and Order in Council, Oct. 2, 1895.

⁵ By an Imperial Order in Council passed on June 23, 1870 pursuant to the Rupert's Land Act, 1868 (U.K. Stat. 1868, c. 105), the former territories of the Hudson's Bay Company known as Rupert's Land and the North-Western Territory were transferred to Canada effective July 15, 1870. These territories were designated as the North-West Territories by the Act of SC 1869, c. 3 and as the Northwest Territories by RSC 1906, c. 62. By Imperial Order in Council of July 31, 1880 (effective Sept. 1, 1880), all British territories and possessions in North America not already included within Canada and all islands adjacent thereto (with the exception of the Colony of Newfoundland and its dependencies) were annexed to Canada and these additional territories were formally included in the North-West Territories by SC 1905, c. 27. The Province of Manitoba was formed out of a portion of the territories by the Manitoba Act, 1870 (SC 1870, c. 3) and a further portion was added to Manitoba in 1881 by SC 1881, c. 14. The Provinces of Alberta and Saskatchewan were formed out of portions of the territories in 1905 and in 1912 other portions were added to Manitoba, Ontario and Quebec.

⁶ By SC 1876, c. 21, a separate district to be known as the District of Keewatin was established and provision was made for the local government thereof. The Act was expressed to come into force by proclamation. It provided that portions of the District might be re-annexed to the North-West Territories by proclamation; in 1886 a portion of the District of Keewatin was re-annexed and in 1905 the entire Keewatin District was re-annexed. The Act of 1876 was never proclaimed. By Order in Council of May 8, 1882 the provisional districts of Assiniboia, Saskatchewan, Alberta and Athabasca were created for the convenience of settlers and for postal purposes. By Order in Council of Oct. 2, 1895 the further provisional districts of Ungava, Franklin, Mackenzie and Yukon were created. The boundaries of these provisional districts were re-defined by Order in Council of Dec. 18, 1897. Subsequently the Yukon Territory was formed, the Provinces of Alberta and Saskatchewan were created and other portions of the territories were annexed to Quebec, Ontario and Manitoba. By Order in Council dated Mar. 16, 1918 (effective Jan. 1, 1920) the remaining portions of the Northwest Territories were divided into three provisional districts known as Mackenzie, Keewatin and Franklin.

⁷ See p. 120.

⁸ The provisional district of Yukon established in 1895 was created a judicial district of the North-West Territories by proclamation issued pursuant to Sect. 51 of the North-West Territories Act (RSC 1886, c. 50) on Aug. 16, 1897 and by the Yukon Territory Act (SC 1898, c. 6) was declared to be a separate Territory.

PART II.—MACHINERY OF GOVERNMENT

Section 1.—The Federal Government

Subsection 1.—The Executive

The Crown.—The British North America Act provides that “the Executive Government and authority of and over Canada is . . . vested in the Queen”. The functions of the Crown, which are substantially the same as those of the Queen in relation to the Government of the United Kingdom, are discharged in Canada by the Governor General in accordance with established principles of responsible government. The practical executive functions of government are exercised by the Cabinet.

The Queen.—The personal participation of the Queen in the functions of the Crown in Canada has been limited to such occasions as the granting of honours and awards, approval of changes in the Table of Precedence, institution of new military awards, or the periodic appointment of a Governor General. On the occasion of a royal visit, the Queen may participate in those ceremonies that otherwise are carried out in her name, such as the opening and dissolution of Parliament, the assent to Bills, and the granting of a general amnesty.

Apart from her constitutional position in relation to the various governments of the Commonwealth countries, the Queen is Head of the Commonwealth and symbolizes the association of the member countries. Until 1953 the title of the Queen was the same throughout the Commonwealth. Constitutional developments put the title somewhat out of accord with the facts of the position and in December 1952 it was decided by the Prime Ministers of the Commonwealth countries meeting at London, England, that new forms of title for each country should be devised. The title for Canada was approved by Parliament and established by a Royal Proclamation on May 29, 1953. The title of the Queen, so far as Canada is concerned, now is:—

“Elizabeth the Second, by the Grace of God of the United Kingdom, Canada and Her other Realms and Territories Queen, Head of the Commonwealth, Defender of the Faith”.

1.—Sovereigns of Canada since Confederation, 1867

Name	Dynasty	Year of Birth	Date of Accession
Victoria.....	House of Hanover.....	1819	June 20, 1837
Edward VII.....	House of Saxe-Coburg and Gotha.....	1841	Jan. 22, 1901
George V.....	House of Windsor.....	1865	May 6, 1910
Edward VIII.....	House of Windsor.....	1894	Jan. 20, 1936
George VI.....	House of Windsor.....	1895	Dec. 11, 1936
Elizabeth II.....	House of Windsor.....	1926	Feb. 6, 1952

The Governor General.—The Governor General, appointed by the Queen as her personal representative on the advice of the Prime Minister of Canada, traditionally serves for a term of five years. He exercises the executive authority of the Queen in relation to the Government of Canada under Letters Patent issued under the Great Seal of Canada (revised and re-issued, effective Oct. 1, 1947) and the provisions of the British North

America Acts, 1867 to 1952. Acting under the recommendations of his responsible Ministers, in the Queen's name, he summons, prorogues and dissolves Parliament, assents to Bills, and exercises other executive functions.

The Governor General's annual salary and allowances provided by the Parliament of Canada are \$48,666 and \$100,000, respectively. In addition other expenses of office are provided for, including the salary of the Governor General's secretary.

The present Governor General is styled His Excellency Major-General Georges P. Vanier, D.S.O., M.C., C.D.

2.—Governors General of Canada since Confederation, 1867

Name	Date of Appointment	Date of Assumption of Office
VISCOUNT MONCK, G.C.M.G.....	June 1, 1867	July 1, 1867
LORD LISGAR, G.C.M.G.....	Dec. 29, 1868	Feb. 2, 1869
The EARL OF DUFFERIN, K.P., K.C.B., G.C.M.G.....	May 22, 1872	June 25, 1872
The MARQUIS OF LORNE, K.T., G.C.M.G.....	Oct. 5, 1878	Nov. 25, 1878
The MARQUIS OF LANSDOWNE, G.C.M.G.....	Aug. 18, 1883	Oct. 23, 1883
LORD STANLEY OF PRESTON, G.C.B.....	May 1, 1888	June 11, 1888
The EARL OF ABERDEEN, K.T., G.C.M.G.....	May 22, 1893	Sept. 18, 1893
The EARL OF MINTO, G.C.M.G.....	July 30, 1898	Nov. 12, 1898
EARL GREY, G.C.M.G.....	Sept. 26, 1904	Dec. 10, 1904
FIELD MARSHAL H. R. H. The DUKE OF CONNAUGHT, K.G.....	Mar. 21, 1911	Oct. 13, 1911
The DUKE OF DEVONSHIRE, K.G., G.C.M.G., G.C.V.O.....	Aug. 19, 1916	Nov. 11, 1916
GENERAL The LORD BYNG OF VIMY, G.C.B., G.C.M.G., M.V.O.....	Aug. 2, 1921	Aug. 11, 1921
VISCOUNT WILLINGDON OF RATTON, G.C.S.I., G.C.I.E., G.B.E.....	Aug. 5, 1926	Oct. 2, 1926
The EARL OF BESSBOROUGH, G.C.M.G.....	Feb. 9, 1931	Apr. 4, 1931
LORD TWEEDSMUIR OF ELSFIELD, G.C.M.G., G.C.V.O., C.H.....	Aug. 10, 1935	Nov. 2, 1935
MAJOR-GENERAL The EARL OF ATHLONE, K.G., P.C., G.C.B., G.C.M.G., G.C.V.O., D.S.O.....	Apr. 3, 1940	June 21, 1940
FIELD MARSHAL VISCOUNT ALEXANDER OF TUNIS, K.G., G.C.B., G.C.M.G., C.S.I., D.S.O., M.C., A.D.C.....	Aug. 1, 1945	Apr. 12, 1946
The RIGHT HONOURABLE VINCENT MASSEY, C.H.....	Jan. 24, 1952	Feb. 28, 1952
MAJOR-GENERAL GEORGES P. VANIER, D.S.O., M.C., C.D.....	Aug. 1, 1959	Sept. 15, 1959

The Cabinet.—The Cabinet is a committee of Ministers chosen by the Prime Minister generally from Members of Parliament. By convention, all members of the Cabinet must either have seats in Parliament or secure seats within a short time and, again by convention, all Ministers in charge of departments of government must be members of the House of Commons. Ministers without Portfolio can be members of either House.

The Cabinet, under the leadership of the Prime Minister, directs the business of the Commons, initiates nearly all public Bills placed before Parliament, and has complete responsibility for the initiation of taxes and the recommendation of expenditures. Following established precedent or convention, it is always responsible to the Commons. When

the Cabinet (the Government) suffers defeat on a Government Bill or a vote of censure or on a motion of want of confidence in the Commons, the existing Government or Cabinet must either resign or request a dissolution from the Governor General. If it resigns, the Governor General may call on the Leader of the Opposition in the Commons to form a new Government. Alternatively, if a Government that has been defeated in the House is granted a dissolution and is defeated in the ensuing general election then, should no clear majority be indicated, the Government may decide (1) to remain in office and seek a vote of confidence in the House when it meets or (2) to resign immediately with the consequent result that the Governor General will ask the leader of the party with the highest number of members returned to form a new Government. These alternatives may also eventuate as a result of a general election subsequent to the normal dissolution of Parliament at or near the close of its statutory life.

The primary responsibility of the Governor General in either of the above circumstances is to provide the nation with a Cabinet or Ministry capable of conducting Her Majesty's Government with the support of the House of Commons.

Although appointed by the Governor General, Cabinet members are selected by the Prime Minister from among his party colleagues in such manner as to ensure, as far as possible, representation of the several geographical and political regions of the country and its principal ethnic, religious and social interests. Each Cabinet Minister generally assumes charge of one of the departments of government, although a Minister may hold more than one portfolio at the same time or he may hold one or more portfolios and one or more acting portfolios, or a Minister without Portfolio may hold one or more acting portfolios. In his acting capacity, the Minister exercises the same authority as if he were the Minister of the department. Sessional and other allowances received by Cabinet Ministers are given at pp. 99-100.

3.—Prime Ministers since Confederation, 1867

Ministry	Prime Minister	Length of Administration
1	Rt. Hon. Sir JOHN ALEXANDER MACDONALD.....	July 1, 1867 — Nov. 5, 1873
2	Hon. ALEXANDER MACKENZIE.....	Nov. 7, 1873 — Oct. 16, 1878
3	Rt. Hon. Sir JOHN ALEXANDER MACDONALD.....	Oct. 17, 1878 — June 6, 1891
4	Hon. Sir JOHN JOSEPH CALDWELL ABBOTT.....	June 16, 1891 — Nov. 24, 1892
5	Rt. Hon. Sir JOHN SPARROW DAVID THOMPSON.....	Dec. 5, 1892 — Dec. 12, 1894
6	Hon. Sir MACKENZIE BOWELL.....	Dec. 21, 1894 — Apr. 27, 1896
7	Hon. Sir CHARLES TUPPER.....	May 1, 1896 — July 8, 1896
8	Rt. Hon. Sir WILFRID LAURIER.....	July 11, 1896 — Oct. 6, 1911
9	Rt. Hon. Sir ROBERT LAIRD BORDEN.....	Oct. 10, 1911 — Oct. 12, 1917 (Conservative Administration)
10	Rt. Hon. Sir ROBERT LAIRD BORDEN.....	Oct. 12, 1917 — July 10, 1920 (Unionist Administration)
11	Rt. Hon. ARTHUR MEIGHEN.....	July 10, 1920 — Dec. 29, 1921 (Unionist—"National Liberal and Conservative Party")
12	Rt. Hon. WILLIAM LYON MACKENZIE KING.....	Dec. 29, 1921 — June 28, 1926
13	Rt. Hon. ARTHUR MEIGHEN.....	June 29, 1926 — Sept. 25, 1926
14	Rt. Hon. WILLIAM LYON MACKENZIE KING.....	Sept. 25, 1926 — Aug. 6, 1930
15	Rt. Hon. RICHARD BEDFORD BENNETT.....	Aug. 7, 1930 — Oct. 23, 1935
16	Rt. Hon. WILLIAM LYON MACKENZIE KING.....	Oct. 23, 1935 — Nov. 15, 1948
17	Rt. Hon. LOUIS STEPHEN ST. LAURENT.....	Nov. 15, 1948 — June 21, 1957
18	Rt. Hon. JOHN GEORGE DIEFENBAKER.....	June 21, 1957 — ...

4.—Members of the Eighteenth Ministry, as at Jan. 31, 1960¹

(According to precedence of Ministers)

NOTE.—A complete list of the members of Federal Ministries from Confederation to 1913 appears in the 1912 Year Book, pp. 422-429. Later Ministries will be found in subsequent editions.

Office	Occupant	Date of First Appointment ²	Date of Appointment to Present Portfolio
Prime Minister.....	Rt. Hon. JOHN GEORGE DIEFENBAKER.....	June 21, 1957	June 21, 1957
Secretary of State for External Affairs.....	Hon. HOWARD CHARLES GREEN.....	June 21, 1957	June 4, 1959
Minister of Finance and Receiver General.....	Hon. DONALD METHUEN FLEMING.....	June 21, 1957	June 21, 1957
Minister of Veterans Affairs.....	Hon. ALFRED JOHNSON BROOKS.....	June 21, 1957	June 21, 1957
Minister of Transport.....	Hon. GEORGE HEES.....	June 21, 1957	June 21, 1957
Solicitor General.....	Hon. LÉON BALCER.....	June 21, 1957	June 21, 1957
Minister of National Defence.....	Hon. GEORGE RANDOLPH PEARKES.....	June 21, 1957	June 21, 1957
Minister of Trade and Commerce.....	Hon. GORDON CHURCHILL.....	June 21, 1957	June 21, 1957
Minister of Justice and Attorney General.....	Hon. EDMUND DAVIE FULTON.....	June 21, 1957	June 21, 1957
Minister of National Revenue.....	Hon. GEORGE CLYDE NOWLAN.....	June 21, 1957	June 21, 1957
Minister of Agriculture.....	Hon. DOUGLAS SCOTT HARKNESS.....	June 21, 1957	Aug. 7, 1957
Minister of Citizenship and Immigration.....	Hon. ELLEN LOUKS FAIRCLOUGH.....	June 21, 1957	May 12, 1958
Minister of Fisheries.....	Hon. J. ANGUS MACLEAN.....	June 21, 1957	June 21, 1957
Minister of Labour.....	Hon. MICHAEL STARR.....	June 21, 1957	June 21, 1957
Postmaster General.....	Hon. WILLIAM MCLEAN HAMILTON.....	June 21, 1957	June 21, 1957
Minister without Portfolio.....	Hon. WILLIAM J. BROWNE.....	June 21, 1957	June 21, 1957
Minister of Mines and Technical Surveys.....	Hon. PAUL COMTOIS.....	Aug. 7, 1957	Aug. 7, 1957
Minister of National Health and Welfare.....	Hon. JAY WALDO MONTEITH.....	Aug. 22, 1957	Aug. 22, 1957
Minister of Northern Affairs and National Resources.....	Hon. FRANCIS ALVIN GEORGE HAMILTON.....	Aug. 22, 1957	Aug. 22, 1957
Minister of Defence Production.....	Hon. RAYMOND O'HURLEY.....	May 12, 1958	May 12, 1958
Minister of Public Works.....	Hon. DAVID JAMES WALKER.....	Aug. 20, 1959	Aug. 20, 1959
Associate Minister of National Defence.....	Hon. JOSEPH PIERRE ALBERT SÉVIGNY.....	Aug. 20, 1959	Aug. 20, 1959

¹ Any changes occurring between Jan. 31, 1960 and the date of going to press will be carried in an Appendix to this volume. ² Appointee was not necessarily sworn in on date given.

Parliamentary Secretaries.—As provided by the Parliamentary Secretaries Act (SC 1959, c. 15), assented to June 4, 1959, the following Parliamentary Secretaries were appointed from among the Members of the House of Commons to hold office for twelve months and to assist the respective Ministers in such manner as each Minister may direct. In so doing the Government revived the system of parliamentary assistantships in practice during the war and postwar years subsequent to 1943, whereby Cabinet Ministers might receive assistance in the performance of their parliamentary functions and promising members of the House might secure a degree of apprenticeship for higher public office. In addition to his annual indemnity as a Member of the House of Commons (see p. 99), a Parliamentary Secretary receives \$4,000 per annum and is entitled to certain travelling and other expenses incurred in the discharge of his duties.

5.—Parliamentary Secretaries, as at Jan. 31, 1960

Secretary	Minister	Date of Appointment
PAUL MARTINEAU.....	Prime Minister.....	Nov. 18, 1959
WALLACE B. NESBITT.....	External Affairs.....	Aug. 20, 1959
RICHARD A. BELL.....	Finance.....	Nov. 18, 1959
WALTER C. DINSDALE.....	Veterans Affairs.....	Nov. 18, 1959
CLAYTON W. HODGSON.....	Transport.....	Nov. 18, 1959
EGAN CHAMBERS.....	National Defence.....	Nov. 18, 1959
JOHN C. PALLETT.....	Trade and Commerce.....	Nov. 18, 1959
THOMAS M. BELL.....	Justice.....	Nov. 18, 1959
MARCEL LAMBERT.....	National Revenue.....	Nov. 18, 1959
L. E. CARDIFF.....	Agriculture.....	Nov. 18, 1959
JOHN A. CHARLTON.....	Citizenship and Immigration.....	Nov. 18, 1959
ROLAND L. ENGLISH.....	Fisheries.....	Nov. 18, 1959
RICHARD D. THRASHER.....	Labour.....	Nov. 18, 1959
EDMUND E. MORRIS.....	Postmaster General.....	Nov. 18, 1959
YVON-ROMA TASSÉ.....	Public Works.....	Nov. 18, 1959

The Privy Council.—The Queen's Privy Council for Canada is composed of eighty to ninety members who are sworn of the Council by the Governor General on the advice of the Prime Minister and who retain membership for life. The Council consists chiefly of present and former Ministers of the Crown. It seldom meets as a body and its constitutional responsibilities as adviser to the Crown in respect to Canada are performed exclusively by a committee thereof consisting of the Ministers who constitute the Cabinet of the day and are also members of the Queen's Privy Council for Canada.

6.—Members of the Queen's Privy Council for Canada According to Seniority Therein, as at Jan. 31, 1960

NOTE.—In this list the prefix "Rt. Hon." indicates membership in the United Kingdom Privy Council. Clerk of the Privy Council and Secretary to the Cabinet, R. B. BRYCE; Assistant Clerk of the Privy Council, A. M. HILL.

Member ¹	Date When Sworn In	Member ¹	Date When Sworn In
Rt. Hon. ARTHUR MEIGHEN.....	Oct. 2, 1915	Hon. GASPARD FAUTEUX.....	May 16, 1949
Hon. ESIOFF LÉON PATENAUBE.....	Oct. 6, 1915	Hon. HUGUES LAPOINTE.....	Aug. 25, 1949
Hon. ALBERT SÉVIGNY.....	Jan. 8, 1917	Hon. GABRIEL ÉDOUARD RINFRET.....	Aug. 25, 1949
Hon. THOMAS ALEXANDER CRESSER.....	Oct. 12, 1917	Hon. WALTER EDWARD HARRIS.....	Jan. 18, 1950
Hon. HENRY HERBERT STEVENS.....	Sept. 21, 1921	Hon. GEORGE PRUDHAM.....	Dec. 13, 1950
Hon. EDWARD JAMES McMURRAY.....	Nov. 14, 1923	Hon. GEORGE BLACK.....	Aug. 3, 1951
Rt. Hon. CHARLES VINCENT MASSEY.....	Sept. 16, 1925	EARL ALEXANDER OF TUNIS.....	Jan. 20, 1952
Hon. WILLIAM DAUM EULER.....	Sept. 25, 1926	Hon. JAMES SINCLAIR.....	Oct. 15, 1952
H.R.H. THE DUKE OF WINDSOR.....	Aug. 2, 1927	Hon. RALPH OSBORNE CAMPNEY.....	Oct. 15, 1952
Hon. ARTHUR CHARLES HARDY.....	July 31, 1930	Hon. WILLIAM ROSS MACDONALD.....	May 12, 1953
Hon. DONALD MATHESON SUTHERLAND.....	Aug. 7, 1930	Hon. GEORGE ALEXANDER DREW.....	May 12, 1953
Hon. THOMAS CEROW MURPHY.....	Aug. 7, 1930	Hon. JOHN WHITNEY PICKERSGILL.....	June 12, 1953
Hon. WILLIAM DUNCAN HERRIDGE.....	June 17, 1931	Rt. Hon. THIBAUDEAU RINFRET.....	Sept. 16, 1953
Hon. SAMUEL GOREL.....	Aug. 14, 1935	Hon. JEAN LESAGE.....	Sept. 17, 1953
Hon. WILLIAM EARL ROWE.....	Aug. 30, 1935	Hon. PATRICK KERWIN.....	July 1, 1954
Hon. ONÉSIME GAGNON.....	Oct. 23, 1935	Hon. GEORGE CARLYLE MARLER.....	July 1, 1954
Hon. CHARLES GAVAN POWER.....	Oct. 23, 1935	Hon. ROCH PINARD.....	July 1, 1954
Rt. Hon. JAMES LORIMER LISLEY.....	Oct. 23, 1935	Hon. HERBERT J. SYMINGTON.....	Nov. 26, 1956
Hon. JOSEPH ENOIL MICHAUD.....	Oct. 23, 1935	Hon. LOUIS RENÉ BEAUDOIN.....	Apr. 15, 1957
Rt. Hon. CLARENCE DECATUR HOWE.....	Oct. 23, 1935	Hon. PAUL THEODORE HELLIER.....	Apr. 26, 1957
Rt. Hon. JAMES GARFIELD GARDINER.....	Nov. 4, 1935	Rt. Hon. JOHN GEORGE DIFFENBAKER ²	June 21, 1957
Hon. COLIN WILLIAM GEORGE GIBSON.....	July 9, 1940	Hon. HOWARD CHARLES GREEN ³	June 21, 1957
Hon. JOSEPH THORARINN THORSON.....	June 11, 1941	Hon. DONALD METHUEN FLEMING ³	June 21, 1957
Hon. WILLIAM FERDINAND ALPHONSE TURGEON.....	Oct. 8, 1941	Hon. ALFRED JOHNSON BROOKS ³	June 21, 1957
Rt. Hon. LOUIS STEPHEN ST. LAURENT.....	Dec. 10, 1941	Hon. GEORGE HEES ³	June 21, 1957
Rt. Hon. SIR WINSTON LEONARD SPENCER CHURCHILL.....	Dec. 29, 1941	Hon. LÉON BAICER ³	June 21, 1957
Hon. ALPHONSE FOURNIER.....	Oct. 7, 1942	Hon. GEORGE RANDOLPH PEARKES ³	June 21, 1957
Hon. BROOKE CLAXTON.....	Oct. 13, 1944	Hon. GORDON CHURCHILL ³	June 21, 1957
Hon. ANDREW GEORGE LATTA McNAUGHTON.....	Nov. 2, 1944	Hon. EDMUND DAVIE FULTON ³	June 21, 1957
Hon. ROBERT ARTHUR JEAN.....	Apr. 18, 1945	Hon. GEORGE CLYDE NOWLAN ³	June 21, 1957
Hon. LIONEL CHEVRIER.....	Apr. 18, 1945	Hon. DOUGLAS SCOTT HARKNESS ³	June 21, 1957
Hon. PAUL JOSEPH JAMES MARTIN.....	Apr. 18, 1945	Hon. ELLEN LOUKS FAIRCLOUGH ³	June 21, 1957
Hon. DOUGLAS CHARLES ABBOTT.....	Apr. 18, 1945	Hon. J. ANGUS McLEAN ³	June 21, 1957
Hon. JAMES JOSEPH McCANN.....	Apr. 18, 1945	Hon. MICHAEL SPARR ³	June 21, 1957
Hon. DAVID LAURENCE MACLAREN.....	Apr. 18, 1945	Hon. WILLIAM McLEAN HAMILTON ³	June 21, 1957
Hon. THOMAS VIEN.....	July 19, 1945	Hon. JAMES MACKERRAS MACDONNELL ³	June 21, 1957
Hon. WISHART McLEA ROBERTSON.....	Sept. 4, 1945	Hon. WILLIAM J. BROWNE ³	June 21, 1957
Hon. MILTON FOWLER GREGG.....	Sept. 2, 1947	Hon. PAUL COMTOIS ³	Aug. 7, 1957
Hon. ROBERT WELLINGTON MAYHEW.....	June 11, 1948	Hon. JAY WALDO MONTEITH ³	Aug. 22, 1957
Hon. LESTER BOWLES PEARSON.....	Sept. 10, 1948	Hon. FRANCIS ALVIN GEORGE HAMILTON ³	Aug. 22, 1957
Hon. STUART SINCLAIR GARSON.....	Nov. 15, 1948	Hon. JOHN THOMAS HAIG.....	Oct. 9, 1957
Hon. ROBERT HENRY WINTERS.....	Nov. 15, 1948	H.R.H. THE PRINCE PHILIP, Duke of Edinburgh.....	Oct. 14, 1957
Hon. FREDERICK GORDON BRADLEY.....	Apr. 1, 1949	Hon. RAYMOND O'HURLEY ³	May 12, 1958
Hon. CHARLES JOST BURCHELL.....	Apr. 1, 1949	Hon. HENRI COURTEMANCHER.....	May 12, 1958
		Hon. DAVID JAMES WALKER ³	Aug. 20, 1959
		Hon. JOSEPH PIERRE ALBERT SÉVIGNY ³	Aug. 20, 1959

¹ Members of Her Majesty's Privy Council for Canada take rank *inter se* according to the dates of their being sworn in.

² Ranks as the Prime Minister of Canada.

³ Ranks as a Member of the Cabinet.

7.—Duration and Sessions of Parliaments, 1945-60

NOTE.—Similar information for the 1st to the 12th Parliaments, covering the period from Confederation to 1917, is given in the 1940 Year Book, p. 46; that for the 13th to 17th Parliaments in the 1945 edition, p. 53; and for the 18th and 19th Parliaments in the 1957-58 edition, p. 46.

Order of Parliament	Session	Date of Opening	Date of Prorogation	Days of Session	Sitting Days of House of Commons	Date of Election, Writs Returnable, Dissolution, and Length of Parliament ^{1,2}
20th Parliament.....	1st	Sept. 6, 1945	Dec. 18, 1945	104	76	June 11, 1945 ³ Aug. 9, 1945 ⁴ Apr. 30, 1949 ⁵ 3 y., 8 m., 22 d.
	2nd	Mar. 14, 1946	Aug. 31, 1946	171	118	
	3rd	Jan. 30, 1947	July 17, 1947	169	115	
	4th	Dec. 5, 1947	June 30, 1948	209	119	
	5th	Jan. 26, 1949	Apr. 30, 1949	95	59	
21st Parliament.....	1st	Sept. 15, 1949	Dec. 10, 1949	87	64	June 27, 1949 ³ Aug. 25, 1949 ⁴ June 13, 1953 ⁵ 3 y., 9 m., 20 d.
	2nd	Feb. 16, 1950	June 30, 1950	135	90	
	3rd	Aug. 29, 1950	Jan. 29, 1951	154	17	
	4th	Jan. 30, 1951	Oct. 9, 1951	253	105	
	5th	Oct. 9, 1951	Dec. 29, 1951	82	56	
	6th	Feb. 28, 1952	Nov. 20, 1952	267	87	
	7th	Nov. 20, 1952	May 14, 1953	176	108	
22nd Parliament.....	1st	Nov. 12, 1953	June 26, 1954	227	139	Aug. 10, 1953 ³ Oct. 8, 1953 ⁴ Apr. 12, 1957 ⁵ 3 y., 6 m., 5 d.
	2nd	Jan. 7, 1955	July 28, 1955	203	140	
	3rd	Jan. 10, 1956	Aug. 14, 1956	218	152	
	4th	Nov. 26, 1956	Jan. 8, 1957	44 ⁶	5	
	5th	Jan. 8, 1957	Apr. 12, 1957	95	71	
23rd Parliament.....	1st	Oct. 14, 1957	Feb. 1, 1958	111	78	June 10, 1957 ³ Aug. 8, 1957 ⁴ Feb. 1, 1958 ⁵ 5 m., 25 d.
24th Parliament.....	1st	May 12, 1958	Sept. 6, 1958	117	93	Mar. 31, 1958 ³ Apr. 30, 1958 ⁴
	2nd	Jan. 15, 1959	July 18, 1959	185	127	
	3rd	Jan. 14, 1960	...	...	...

¹ The ordinary legal limit of duration for each Parliament is five years. ² Duration of Parliament in years, months and days. The life of a Parliament is counted from the date of return of election writs to the date of dissolution, both days inclusive (B.N.A. Act, Sect. 50). ³ Date of general election. ⁴ Writs returnable. ⁵ Dissolution of Parliament. ⁶ Includes long adjournment from Nov. 29, 1956 to Jan. 8, 1957.

Subsection 2.—The Legislature

The federal legislative authority is vested in the Parliament of Canada consisting of the Queen, an Upper House styled the Senate, and the House of Commons. Bills may originate in either the Senate or the House subject to the provisions of Sect. 53 of the British North America Act, 1867, which provides that Bills for the appropriation of any part of the public revenue or the imposition of any tax or impost shall originate in the House of Commons. Bills must pass both Houses and receive Royal Assent before becoming law. In practice most public Bills originate in the House of Commons although there has been a marked increase recently in the introduction of public Bills in the Senate, at the instance of the Government, in order that Bills may be dealt with in the Senate while the Commons is engaged in other matters, such as the debate on the Speech from the Throne. Private Bills usually originate in the Senate. The Senate may delay, amend or even refuse to pass Bills sent to it from the Commons, but differences are usually settled without serious conflict. (See Chap. XXVII for current legislation.)

Under Sect. 91 of the British North America Acts, 1867-1952, the legislative authority of the Parliament of Canada extends to the following matters: the amendment of the Constitution of Canada (subject to certain exceptions); the public debt and property; the regulation of trade and commerce; unemployment insurance; the raising of money by any mode or system of taxation; the borrowing of money on the public credit; postal service; the Census and statistics; militia, military and naval service, and defence; the fixing of and providing for the salaries and allowances of civil and other officers of the Government of Canada; beacons, buoys, lighthouses and Sable Island; navigation and shipping; quarantine and the establishment and maintenance of marine hospitals; sea coast and

inland fisheries; ferries between a province and any British or foreign country or between two provinces; currency and coinage, banking, incorporation of banks and the issue of paper money; savings banks; weights and measures; bills of exchange and promissory notes; interest; legal tender; bankruptcy and insolvency; patents of invention and discovery; copyrights; Indians and lands reserved for the Indians; naturalization and aliens; marriage and divorce; the criminal law, except the constitution of courts of criminal jurisdiction, but including the procedure in criminal matters; the establishment, maintenance and management of penitentiaries; such classes of subjects as are expressly excepted in the enumeration of the classes of subjects by these Acts assigned exclusively to the legislatures of the provinces.

Under Sect. 95, the Parliament of Canada may make laws in relation to agriculture and immigration concurrently with provincial legislatures although federal legislation is paramount in the event of conflict. By the British North America Act, 1951 (U.K. Stat. 1950-51, c. 32) it is declared that the Parliament of Canada might make laws in relation to old age pensions in Canada but no such law shall affect the operation of any provincial laws in relation to old age pensions.

The Senate.—From an original membership of 72 at Confederation, the Senate, through the addition of new provinces and the general growth of population, now has 102 members, the latest change in representation having been made on the admission of Newfoundland to Confederation in 1949. The growth of representation in the Senate is traced in the 1940 Year Book, pp. 47-49, and is summarized by provinces in Table 8.

8.—Representation in the Senate since Confederation, 1867

Province	1867	1870	1871	1873	1882	1887	1892	1903	1905	1915-1948	1949-1960
Ontario.....	24	24	24	24	24	24	24	24	24	24	24
Quebec.....	24	24	24	24	24	24	24	24	24	24	24
Atlantic Provinces.....	24	24	24	24	24	24	24	24	24	24	30
Nova Scotia.....	12	12	12	10	10	10	10	10	10	10	10
New Brunswick.....	12	12	12	10	10	10	10	10	10	10	10
Prince Edward Island.....	...	...	...	4	4	4	4	4	4	4	4
Newfoundland.....	...	...	...	...	...	...	...	...	...	...	6
Western Provinces.....	...	2	5	5	6	8	9	11	15	24	24
Manitoba.....	...	2	2	2	3	3	4	4	4	6	6
British Columbia.....	...	...	3	3	3	3	3	3	3	6	6
Saskatchewan.....	...	...	...	...	...	2	2	4	4	6	6
Alberta.....	...	...	...	...	...	...	...	...	4	6	6
Totals.....	72	74	77	77	78	80	81	83	87	96	102

Senators are appointed for life by the Governor General by instrument under the Great Seal of Canada on the recommendation of the Prime Minister. The actual power of appointing Senators resides by constitutional usage in the Prime Minister whose advice the Governor General accepts in this regard. In each of the four main divisions of Canada, except Quebec, Senators represent the whole of the province for which they are appointed; in Quebec one Senator is appointed for each of the 24 electoral divisions of what was formerly Lower Canada. The deliberations of the Senate are presided over by a Speaker appointed by the Governor General in Council (in effect by the Government) and government business in the Senate is sponsored by the Government Leader in the Senate.

The Senate is not a competitor of the House of Commons in the field of legislation, but, in the main, acts as a second chamber giving further scrutiny to legislation initiated in the House of Commons. Under the Constitution, Bills for appropriating any part of the public revenue or for imposing a tax or impost must originate in the Commons but in every other respect, since both Houses must concur in every piece of legislation, the Senate has an equal voice with the House of Commons.

9.—Members of the Senate, by Province, as at Jan. 31, 1960¹

Speaker.....	HON. MARK ROBERT DROUIN
Leader of the Government.....	HON. WALTER M. ASETLINE
Leader of the Opposition.....	HON. WILLIAM ROSS MACDONALD
Clerk of the Senate and Clerk of the Parliaments.....	JOHN FORBES MACNEILL

(Ranked according to seniority, by province. All Senators are entitled to the designation "Honourable".)

Province and Name of Senator	P.O. Address	Province and Name of Senator	P.O. Address
Newfoundland— (6 Senators)		Ontario— (24 Senators)	
BAIRD, ALEXANDER BOYD.....	St. John's	HARDY, ARTHUR CHARLES.....	Brockville
PETTEN, RAY.....	St. John's	WILSON, CAIRINE REAY.....	Ottawa
PRATT, CALBERT C.....	St. John's	LAMBERT, NORMAN PLATT.....	Ottawa
BASHA, MICHAEL G.....	Curling	HAYDEN, SALTER ADRIAN.....	Toronto
BRADLEY, FREDERICK GORDON.....	Bonavista	PATTERSON, NORMAN MCLEOD.....	Fort William
HIGGINS, JOHN G.....	St. John's	EULER, WILLIAM DAUM.....	Kitchener
Prince Edward Island— (4 Senators)		DAVIES, WILLIAM RUPERT.....	Toronto
GRANT, THOMAS VINCENT.....	Montague	CAMPBELL, GORDON PETER.....	Toronto
BARBOUR, GEORGE H.....	Charlottetown	TAYLOR, WILLIAM HORACE.....	Brantford
INMAN, F. ELSIE.....	Montague	BISHOP, CHARLES LAWRENCE.....	Ottawa
MACDONALD, JOHN J.....	Charlottetown	ROEBUCK, ARTHUR WENTWORTH.....	Toronto
Nova Scotia— (9 Senators—1 vacancy)		FARQUHAR, THOMAS.....	Little Current
QUINN, FELIX PATRICK.....	Bedford	FRASER, WILLIAM ALEXANDER.....	Trenton
ROBERTSON, WISHART MCLEA.....	Truro	GOLDING, WILLIAM HENRY.....	Seaforth
KINLEY, JOHN JAMES.....	Lunenburg	WOODROW, ALLAN L.....	Toronto
MCDONALD, JOHN ALEXANDER.....	Halifax	MACDONALD, WILLIAM ROSS.....	Brantford
COMEAU, JOSEPH WILIE.....	Comeauville	BRADLETTE, JOSEPH ARTHUR.....	Cochrane
ISNOR, GORDON B.....	Halifax	CONNOLLY, JOHN J.....	Ottawa
SMITH, DONALD.....	Liverpool	CROLL, DAVID A.....	Toronto
CONNOLLY, HAROLD.....	Halifax	LEONARD, T. D'ARCY.....	Toronto
BOIS, FREDERICK M.....	Truro	WHITE, GEORGE STANLEY.....	Madoc
New Brunswick— (9 Senators—1 vacancy)		SULLIVAN, JOSEPH A.....	Toronto
VENIOT, CLARENCE JOSEPH.....	Bathurst	BRUNT, WILLIAM R.....	Hanover
MCLEAN, ALEXANDER NEIL.....	Saint John	CHOQUETTE, LIONEL.....	Ottawa
BURCHILL, GEORGE PERCIVAL.....	South Nelson		
FERGUSON, MURIEL MCQUEEN.....	Fredericton	Manitoba— (6 Senators)	
LÉGER, AUREL D.....	Grand Digue	HAIG, JOHN THOMAS.....	Winnipeg
McGRAND, FRED A.....	Fredericton	BEAUBIEN, ARTHUR LUCIEN.....	St. Jean Baptiste
	Junction	CRERAR, THOMAS ALEXANDER.....	Winnipeg
SAVOIE, CALIXTE F.....	Moncton	WALL, WILLIAM M.....	Winnipeg
TAYLOR, AUSTIN CLAUDE.....	Salisbury	THORVALDSON, GUNNAR S.....	Winnipeg
EMERSON, CLARENCE V.....	Saint John	IRVINE, OLIVE L.....	Winnipeg
Quebec— (22 Senators—2 vacancies)		Saskatchewan— (6 Senators)	
RAYMOND, DONAT.....	Montreal	HORNER, RALPH BYRON.....	Blaine Lake
HUGESSEN, ADRIAN KNATCHBULL.....	Montreal	ASELTINE, WALTER MORLEY.....	Rosetown
HOWARD, CHARLES BENJAMIN.....	Sherbrooke	WOOD, THOMAS H.....	Regina
GOUTIN, LÉON MERCIER.....	Montreal	BOUCHER, WILLIAM ALBERT.....	Prince Albert
VIEN, THOMAS.....	Outremont	PEARSON, ARTHUR M.....	Lumsden
BOUCHARD, TÉLESPHORE DAMIEN.....	St. Hyacinthe	HNATYSHYN, JOHN.....	Saskatoon
VAILLANCOURT, CYRILLE.....	Lévis		
DUPIUS, VINCENT.....	Montreal	Alberta— (6 Senators)	
DESSUREAULT, JEAN MARIE.....	Quebec	BLAIS, ARISTIDE.....	Edmonton
BOUFFARD, PAUL HENRI.....	Quebec	GERSHAW, FRED WILLIAM.....	Medicine Hat
JODOIN, MARIANA BEAUCHAMP.....	Montreal	STAMBAUGH, J. WESLEY.....	Bruce
TREMBLAY, LEONARD D. SWEZEY.....	St. Malachie	CAMERON, DONALD.....	Edmonton
FOURNIER, SARTO.....	Montreal	GLADSTONE, JAMES.....	Cardston
MOLSON, H. de M.....	Montreal	BUCHANAN, JOHN A.....	Edmonton
POWER, C. G.....	Quebec		
POULIOT, JEAN FRANÇOIS.....	Rivière du Loup	British Columbia— (6 Senators)	
BOIS, HENRI CHARLES.....	St. Bruno,	FARRIS, JOHN WALLACE DE BEQUE.....	Vancouver
	Chambly Co.	TURGEON, JAMES GRAY.....	Vancouver
LEFRANÇOIS, J. EUGÈNE.....	Montreal	McKEEN, STANLEY STEWART.....	Vancouver
DROUIN, MARK ROBERT.....	Quebec	REID, THOMAS.....	New Westminster
METHOT, LÉON.....	Trois Rivières	HODGES, NANCY.....	Victoria
MONETTE, GUSTAVE.....	Montreal	SMITH, SIDNEY JOHN.....	Kamloops
COURTEMANCHE, HENRI.....	Mont Laurier		

¹ Any changes occurring between Jan. 31, 1960 and the date of going to press will be carried in an Appendix to this volume.

The House of Commons.—The British North America Act, 1867 provided that in respect of representation in the House of Commons the Province of Quebec should have the fixed number of sixty-five members and that there should be assigned to each of the other provinces such a number of members as would bear the same proportion to the number of its population as the number sixty-five bears to the number of the population of Quebec. This Act also provided that on the completion of a census in 1871 and of each subsequent decennial census the representation of the several provinces should be re-adjusted from time to time provided the proportionate representation of the provinces as prescribed by the Act were not thereby disturbed.

In the session of 1946 the House of Commons adopted a resolution stating that the effect of the provisions of the British North America Act relating to representation had not been satisfactory in that proportionate representation of the provinces according to population had not been maintained and that a more equitable apportionment of members to the various provinces could be effected if readjustments were made on the basis of the population of all the provinces taken as a whole. The Act was amended accordingly in 1946 to provide a new rule to regulate representation in the House of Commons. Generally speaking, representation was fixed as follows:—

The membership assigned to each province shall be computed by dividing the total population of the provinces by two hundred and fifty-four and by dividing the population of each province by the quotient so obtained.

This rule, employed in the redistribution of representation made in 1947, was effective in the general election of 1949.

After the completion of the 1951 Census it was apparent that as a result of a wartime shift of population a substantial reduction in the representation of the Province of Saskatchewan would ensue under the rules then regulating representation. Accordingly, in an effort to eliminate sharp reductions in provincial representation from one census to another, the British North America Act was again amended to provide representation on the following basis:—

“Sect. 51.—(1) Subject as hereinafter provided, the number of members of the House of Commons shall be two hundred and sixty-three and the representation of the provinces therein shall forthwith upon the coming into force of this section and thereafter on the completion of each decennial census be readjusted by such authority, in such manner, and from such time as the Parliament of Canada from time to time provides, subject and according to the following rules:—

“1. There shall be assigned to each of the provinces a number of members computed by dividing the total population of the provinces by two hundred and sixty-one and by dividing the population of each province by the quotient so obtained, disregarding, except as hereinafter in this section provided, the remainder, if any, after the said process of division.

“2. If the total number of members assigned to all the provinces pursuant to rule one is less than two hundred and sixty-one, additional members shall be assigned to the provinces (one to a province) having remainders in the computation under rule one commencing with the province having the largest remainder and continuing with the other provinces in the order of the magnitude of their respective remainders until the total number of members assigned is two hundred and sixty-one.

“3. Notwithstanding anything in this section, if upon completion of a computation under rules one and two, the number of members to be assigned to a province is less than the number of senators representing the said province, rules one and two shall cease to apply in respect of the said province, and there shall be assigned to the said province a number of members equal to the said number of senators.

“4. In the event that rules one and two cease to apply in respect of a province then, for the purpose of computing the number of members to be assigned to the provinces in respect of which rules one and two continue to apply, the total population of the provinces shall be reduced by the number of the population of the province in respect of which rules one and two have ceased to apply and the number two hundred and sixty-one shall be reduced by the number of members assigned to such province pursuant to rule three.

“5. On any such readjustment the number of members for any province shall not be reduced by more than fifteen per cent below the representation to which such province was entitled under rules one to four of this subsection at the last preceding readjustment of the representation of that province, and there shall be no reduction in the representation of any province as a result of which that province would have a smaller number of members

than any other province that according to the results of the then last decennial census did not have a larger population; but for the purposes of any subsequent readjustment of representation under this section any increase in the number of members of the House of Commons resulting from the application of this rule shall not be included in the divisor mentioned in rules one to four of this subsection.

"6. Such readjustment shall not take effect until the termination of the then existing Parliament.

"(2) The Yukon Territory as constituted by chapter forty-one of the Statutes of Canada, 1901, shall be entitled to one member, and such other part of Canada not comprised within a province as may from time to time be defined by the Parliament of Canada shall be entitled to one member." (RSC 1952, c. 304.)

The principal effect of these latest rules is that the representation of any province shall not be reduced by more than 15 p.c. at any one readjustment, subject however to the qualification that the rule shall not work out in such manner that the representation of a province with a smaller population shall be greater than any province with a larger population.

Subsequently, Parliament enacted a measure, "An Act to readjust the Representation in the House of Commons, 1952", effective in the general election of 1953, which provided that representation in the House of Commons shall be on the following basis:—

"Sect. 2.—Eighty-five members of the House of Commons shall be elected for the Province of Ontario, seventy-five for the Province of Quebec, twelve for the Province of Nova Scotia, ten for the Province of New Brunswick, fourteen for the Province of Manitoba, twenty-two for the Province of British Columbia, four for the Province of Prince Edward Island, seventeen for the Province of Saskatchewan, seventeen for the Province of Alberta, seven for the Province of Newfoundland, one for the Yukon Territory and one for Mackenzie district of the Northwest Territories, thus making a total of two hundred and sixty-five members." (RSC 1952, c. 334.)

The number of representatives of each province elected at each of the 23 general elections since Confederation is given in Table 10.

10.—Representation in the House of Commons, as at Federal General Elections 1867-1958

Province or Territory	1867	1872	1874 1878	1882	1887 1891	1896 1900	1904	1908 1911	1917 1921	1925 1926 1930	1935 1940 1945	1949	1953 1957 1958
Ontario.....	82	88	88	92	92	92	86	86	82	82	82	83	85
Quebec.....	65	65	65	65	65	65	65	65	65	65	65	73	75
Nova Scotia.....	19	21	21	21	21	20	18	18	16	14	12	13	12
New Brunswick.....	15	16	16	16	16	14	13	13	11	11	10	10	10
Manitoba.....	...	4	4	5	5	7	10	10	15	17	17	16	14
British Columbia.....	...	6	6	6	6	6	7	7	13	14	16	18	22
Prince Edward Island.....	...	...	6	6	6	5	4	4	4	4	4	4	4
Saskatchewan.....	...	...	...	...	4	4	10	10	16	21	21	20	17
Alberta.....	...	...	...	...	...	...	7	7	12	16	17	17	17
Yukon.....	...	...	...	...	...	...	1	1	1	1	1	1	1
Mackenzie River, N.W.T. }	...	...	...	...	...	...	...	...	...	...	...	...	...
Newfoundland.....	...	...	...	...	...	...	...	...	...	...	...	7	7
Totals.....	181	200	206	211	215	213	214	221	235	245	245	262	265

Under their parliamentary system of representation, based on a "constitution similar in principle to that of the United Kingdom", the people of Canada elect representatives having various political party affiliations as shown in Table 11. In a general election, the Canadian electorate not only determines what political party leader shall be called on to form the Government of the day, but it also decides which of the parties is to become the Official Opposition. Her Majesty's Loyal Opposition occupies an essential place in constitutions based on the British parliamentary system, in that its function is to oppose or criticize in debate the Government in power—an essential to good government at all times. The Official Opposition is founded, like such institutions as the Cabinet and the Prime Ministership, on unwritten custom that has become firmly established. Although the position of Leader of the Opposition is not recognized in the British North America

Act, it received statutory acknowledgment in the Canadian Parliament in 1905 when the Senate and House of Commons Act (SC 1905, c. 43, Sect. 2) provided an additional sessional allowance to "the member occupying the recognized position of Leader of the Opposition in the House of Commons".

11.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-Fourth General Election, Mar. 31, 1958, and Revised to Jan. 31, 1960.¹

Speaker.....	HON. ROLAND MICHENER
Prime Minister.....	RT. HON. JOHN GEORGE DIFENBAKER
Leader of the Opposition.....	HON. LESTER B. PEARSON
Clerk of the House of Commons.....	LÉON J. RAYMOND

NOTE.—The vote is summarized by provinces in Table 13, p. 100. The leaders of the political parties are indicated by asterisks (*). This information, except the population of constituencies, has been supplied by the Chief Electoral Officer. Party affiliations are unofficial. P.C.=Progressive Conservative; Lib.=Liberal; C.C.F.=Co-operative Commonwealth Federation; L-Lab.=Liberal-Labour.

Province and Electoral District	Popu- lation, Census 1956	Voters on List	Total Votes Polled	Votes Polled by Mem- ber	Name of Member	P.O. Address	Party Affil- iation
	No.	No.	No.	No.			
Newfoundland—							
(7 members)							
Bonavista-Twillingate..	48,354	24,349	18,117	13,670	Hon. J. W. PICKERSGILL.	Ottawa, Ont.....	Lib.
Burin-Burgeo.....	46,362	21,624	16,318	11,360	C. W. CARTER.....	St. John's.....	Lib.
Grand Falls-White Bay- Labrador.....	71,416	35,034	26,649	16,328	C. R. GRANGER.....	St. John's.....	Lib.
Humber-St. George's..	64,683	29,101	23,924	13,468	H. M. BATTEN.....	Corner Brook.....	Lib.
St. John's East.....	66,132	33,998	27,585	17,894	J. A. McGRATH.....	St. John's.....	P.C.
St. John's West.....	62,921	32,947	26,706	15,953	Hon. W. J. BROWNE..	St. John's.....	P.C.
Trinity-Conception....	55,206	27,725	21,629	12,599	J. R. TUCKER.....	St. John's.....	Lib.
Prince Edward Island—							
(4 members)							
Kings.....	17,853	9,956	8,965	5,018	J. A. MACDONALD.....	Cardigan.....	P.C.
Prince.....	38,007	19,314	17,383	10,444	O. H. PHILLIPS.....	Alberton.....	P.C.
Queens.....	43,425	24,930	42,954	13,969	Hon. J. A. MACLEAN..	Beaton's Mills....	P.C.
				13,480	H. MACQUARRIE.....	Victoria.....	P.C.
Nova Scotia—							
(12 members)							
Antigonish—							
Guysborough.....	26,878	14,757	12,662	6,758	C. O'LEARY.....	Antigonish.....	P.C.
Cape Breton North and Victoria.....							
	46,874	24,283	20,841	12,046	R. MUIR.....	Sydney Mines....	P.C.
Cape Breton South....	83,152	43,879	38,740	17,636	D. MACINNIS.....	Glace Bay.....	P.C.
Colchester-Hants.....	59,529	33,298	28,831	15,653	C. F. KENNEDY.....	Truro.....	P.C.
Cumberland.....	39,598	22,688	19,017	11,379	R. C. COATES.....	Amherst.....	P.C.
Digby-Annapolis-Kings	71,076	39,163	33,621	19,432	Hon. G. C. NOWLAN..	Wolfville.....	P.C.
Halifax.....	197,943	112,253	179,287	53,693	R. McCLEAVE.....	Halifax.....	P.C.
				53,255	E. MORRIS.....	Halifax.....	P.C.
Inverness-Richmond..	32,833	19,064	15,518	7,725	R. S. MACLELLAN....	Portage, Cape Breton....	P.C.
Pictou.....	44,566	25,638	22,649	13,618	R. MACEWAN.....	New Glasgow.....	P.C.
Queens-Lunenburg....	46,981	29,355	24,905	14,156	L. R. CROUSE.....	Lunenburg.....	P.C.
Shelburne - Yarmouth- Clare.....	45,287	25,818	22,408	12,071	F. F. LEGERE.....	Pinkney's Point... P.C.	
New Brunswick—							
(10 members)							
Charlotte.....	24,497	13,965	12,379	6,448	R. D. C. STEWART....	St. George.....	P.C.
Gloucester.....	64,119	28,326	25,025	13,112	H. J. ROBICHAUD.....	Caraquet.....	Lib.
Kent.....	27,492	12,949	11,236	6,118	H. J. MICHAUD.....	Buctouche.....	Lib.
Northumberland							
Miramichi.....	47,223	22,862	19,665	10,206	G. R. McWILLIAM....	Newcastle.....	Lib.

¹ Any changes in membership occurring between Jan. 31, 1960 and the date of going to press will be carried in an Appendix to this volume.

11.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-Fourth General Election, Mar. 31, 1958, and Revised to Jan. 31, 1960—continued.

Province and Electoral District	Population, Census 1956	Voters on List	Total Votes Polled	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
New Brunswick—concl.							
Restigouche—							
Madawaska.....	76,708	35,342	30,956	17,221	J. C. VAN HORNE.....	Campbellton.....	P.C.
Royal.....	37,105	21,126	17,673	10,483	Hon. A. J. BROOKS.....	Sussex.....	P.C.
Saint John-Albert.....	42,335	54,781	42,782	27,049	T. M. BELL.....	Saint John.....	P.C.
Victoria-Carleton.....	42,093	22,083	17,961	10,692	G. W. MONTGOMERY.....	Woodstock.....	P.C.
Westmorland.....	85,414	48,565	42,107	20,149	W. L. M. CREAGHAN.....	Moncton.....	P.C.
York-Sunbury.....	57,630	34,388	29,922	15,943	J. C. MACRAE.....	Fredericton.....	P.C.
Quebec—							
(75 members)							
Argenteuil-Deux-Montagnes.....	55,069	30,486	25,889	14,483	J. O. LATOUR.....	St. Benoit.....	P.C.
Beauce.....	59,290	28,585	24,773	10,417	J. P. RACINE.....	St. Honoré de Shelleny.....	P.C.
Beauharnois-Salaberry.....	53,811	31,939	25,883	13,202	G. BRUCHÉSI.....	Ville de Léry.....	Lib.
Bellechasse.....	32,546	15,842	13,204	6,861	N. DORION.....	Ste. Foy.....	P.C.
Berthier-Maskinongé—							
Delanauvière.....	47,423	24,879	21,653	12,702	R. PAUL.....	Louiseville.....	P.C.
Bonaventure.....	43,240	19,514	16,992	9,135	L. GRENIER.....	New Carlisle.....	P.C.
Brome-Missisquoi.....	40,563	22,434	18,575	11,361	H. GRAFFTEY.....	Knowlton.....	P.C.
Chambly-Rouville.....	45,350	25,300	21,362	10,546	M. JOHNSON.....	Beleofil.....	P.C.
Champlain.....	58,321	30,525	27,156	13,537	P. LAHAYE.....	Batiscan.....	P.C.
Chapleau.....	65,456	32,006	24,896	14,705	J. J. MARTEL.....	Amos.....	P.C.
Charlevoix.....	47,430	23,479	20,447	12,315	M. ASSELIN.....	La Malbaie.....	P.C.
Châteauguay-Huntingdon-Laprairie.....	52,413	28,040	22,033	12,365	M. E. BARRINGTON.....	Ormstown.....	P.C.
Chicoutimi.....	70,668	34,437	30,659	15,407	V. BRASSARD.....	Chicoutimi.....	P.C.
Compton-Frontenac.....	44,048	20,844	18,171	9,383	G. M. STEARNS.....	Lac Mégantic.....	P.C.
Dorchester.....	38,737	18,375	16,014	8,766	N. DROUIN.....	St. Maxime de Scott.....	P.C.
Drummond—							
Arthabaska.....	83,407	41,685	35,316	17,288	S. BOULANGER.....	Victoriaville.....	Lib.
Gaspé.....	63,941	28,994	24,978	14,535	R. L. ENGLISH.....	Rivière au Renard.....	P.C.
Gatineau.....	48,721	25,625	20,935	10,840	R. LEDUC.....	Maniwaki.....	Lib.
Hull.....	76,231	41,923	36,238	20,132	A. CARON.....	Hull.....	Lib.
Îles-de-la-Madeleine.....	11,556	5,191	4,755	2,471	J.-R. KEAYS.....	Gaspé.....	P.C.
Joliette-L'Assomption-Montcalm.....	87,101	46,600	37,561	21,821	L.-J. PIGEON.....	Joliette.....	P.C.
Kamouraska.....	35,907	18,038	14,683	7,691	C. RICHARD.....	Ste. Anne de la Pocatière.....	P.C.
Labelle.....	43,705	21,609	18,440	10,606	Hon. H. COURTEMANCHE ¹	Mont Laurier.....	P.C.
Lac-Saint-Jean.....	42,918	19,931	17,813	8,255	R. PARIZEAU.....	Alma.....	P.C.
Lapointe.....	68,106	33,701	29,222	12,113	A. BRASSARD.....	Jonquière.....	Lib.
Lévis.....	44,284	25,135	21,806	12,410	M. BOURGET.....	Lévis.....	Lib.
Longueuil.....	85,540	48,560	37,829	18,637	Hon. J. P. A. SÉVIGNY.....	Westmount.....	P.C.
Lotbinière.....	38,625	18,521	16,182	9,610	Hon. R. O'HURLEY.....	St. Gilles.....	P.C.
Matapédia-Matane.....	67,441	29,752	25,581	14,969	A. BELZILE.....	St. Léon le Grand.....	P.C.
Mégantic.....	64,958	31,569	26,942	13,486	G. ROBERGE.....	Thetford Mines.....	Lib.
Montmagny-L'Islet.....	39,840	20,173	16,777	8,689	Hon. J. LESAGE ²	Quebec.....	Lib.
Nicolet-Yamaska.....	45,880	23,515	19,231	11,880	Hon. P. COMTOIS.....	Pierreville.....	P.C.
Pontiac-Témiscamingue.....	42,432	20,628	17,423	8,842	P. MARTINEAU.....	Campbell's Bay.....	P.C.
Portneuf.....	46,976	25,580	21,627	11,386	A. ROMPRÉ.....	St. Ubald.....	P.C.
Quebec East.....	87,323	52,622	45,397	22,285	Y. R. TASSÉ.....	Sillery.....	P.C.
Quebec South.....	54,949	37,616	31,683	15,771	J. FLYNN.....	Quebec.....	P.C.
Quebec West.....	55,413	32,338	27,924	14,223	J. E. BISSONNETTE.....	St. Vallier Ouest.....	P.C.
Quebec-Montmorency.....	98,331	53,501	46,471	25,394	R. LAFRENIÈRE.....	Ste. Foy.....	P.C.
Richelieu-Verchères.....	53,068	29,394	24,738	13,497	L.-J.-L. CARDIN.....	Ste. Anne de Sorel.....	Lib.
Richmond-Wolfé.....	57,963	29,305	23,990	11,984	V.-F. DUBOIS.....	Asbestos.....	P.C.
Rimouski.....	70,683	33,759	28,657	16,426	E. MORISSETTE.....	Mont Joli.....	P.C.
Roberval.....	52,980	23,342	19,984	10,696	J. N. TREMBLAY.....	St. André.....	P.C.
Saint-Hyacinthe-Bagot.....	58,517	32,557	26,947	15,761	T. RICARD.....	St. Hyacinthe.....	P.C.
Saint-Jean-Iberville-Napierville.....	57,871	30,739	26,826	14,332	Y. DUPUIS.....	St. Jean.....	Lib.
Saint-Maurice-Lafèche.....	79,451	43,873	35,059	18,556	J.-A. RICHARD.....	Shawinigan.....	Lib.

¹ Resigned Jan. 19, 1960; appointed to the Senate Jan. 20, 1960. Results of by-election in Appendix.
² Resigned Jan. 11, 1958 to assume leadership of the Liberal Party in Quebec; see Table 12 for by-election.

11.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-Fourth General Election, Mar. 31, 1958, and Revised to Jan. 31, 1960—continued.

Province and Electoral District	Population, Census 1956	Voters on List	Total Votes Polled	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
Quebec—concluded							
Saguenay.....	56,655	32,282	24,820	13,194	P. LA RUE.....	Baie Comeau.....	P.C.
Shefford.....	60,388	31,755	26,215	13,001	M. BOIVIN.....	Granby.....	Lib.
Sherbrooke.....	64,463	36,975	30,362	15,383	M. ALLARD.....	Sherbrooke.....	P.C.
Stanstead.....	41,348	22,454	18,659	10,363	R. LÉTOURNEAU.....	Stanstead Plain.....	P.C.
Témiscouata.....	58,424	26,927	23,379	13,361	A. FRÉCHETTE.....	Cabano.....	P.C.
Terrebonne.....	81,895	46,746	37,953	19,319	M. DESCHAMBAULT.....	St. Jérôme.....	P.C.
Trois-Rivières.....	62,932	36,338	30,505	18,049	Hon. L. BALCER.....	Trois Rivières.....	P.C.
Vaudreuil-Soulanges.....	32,361	18,420	15,558	8,161	M. BOURBONNAIS.....	Terrasse Vaudreuil.....	P.C.
Villeneuve.....	74,366	34,517	29,067	10,102	A. DUMAS.....	Malartic.....	Lib.
Island of Montreal and Île Jésus—							
Cartier.....	48,952	25,907	16,713	7,097	L. D. CRESTOHL.....	Montreal.....	Lib.
Dollard.....	50,584	51,102	38,820	18,760	G. ROULEAU.....	Montreal.....	Lib.
Hochelaga.....	75,004	46,363	32,101	16,706	R. EUDES.....	Montreal.....	Lib.
Jacques-Cartier- Lasalle.....	110,931	70,995	58,922	30,908	J. PRATT.....	Dorval.....	P.Q.
Lafontaine.....	50,584	33,355	23,991	12,195	J. G. RATELLE.....	Montreal.....	Lib.
Laurier.....	47,055	29,400	20,046	10,125	Hon. L. CHEVRIER.....	Pont Viau.....	Lib.
Laval.....	117,525	73,692	55,581	26,076	R. BOURDAGES.....	Laval des Rapides.....	P.C.
Maisonneuve- Rosemont.....	94,124	62,259	43,720	21,515	J. P. DESCHATELETS.....	Montreal.....	Lib.
Mercier.....	124,913	76,119	53,256	26,463	A. GILLET.....	Cité de St. Michel.....	P.C.
Mont Royal.....	106,636	66,494	46,113	22,051	A. A. MACNAUGHTON.....	Montreal.....	Lib.
Notre-Dame-de- Grâce.....	93,983	59,476	45,260	27,145	Hon. W. M. HAMILTON.....	Montreal.....	P.C.
Outremont-Saint-Jean	58,446	34,924	23,220	12,715	R. BOURQUE.....	Outremont.....	Lib.
Papineau.....	81,066	50,872	35,387	18,466	A. MEUNIER.....	Montreal.....	Lib.
St. Ann.....	40,783	22,689	16,143	8,289	G. LOISELLE.....	Montreal.....	Lib.
Saint-Antoine- Westmount.....	61,800	41,379	30,028	15,882	R. WEBSTER.....	Westmount.....	P.C.
Saint-Denis.....	65,286	40,538	29,080	14,737	A. DENIS.....	Montreal.....	Lib.
Saint-Henri.....	68,959	40,643	29,946	11,533	H. PIT LESSARD.....	Montreal.....	Lib.
Saint-Jacques.....	63,653	40,856	25,021	12,798	C.-E. CAMPEAU.....	Montreal.....	P.C.
St. Lawrence.....							
St. George.....	44,510	27,503	17,901	9,702	E. CHAMBERS.....	Westmount.....	P.C.
Sainte-Marie.....	60,539	35,657	22,770	11,635	G. J. VALADE.....	Montreal.....	P.C.
Verdun.....	78,262	47,584	35,940	16,357	H. E. MONTEITH.....	Verdun.....	P.C.
Ontario—							
(85 members)							
Algoma East.....	40,838	29,196	21,712	11,240	Hon. L. B. PEARSON*.....	Ottawa.....	Lib.
Algoma West.....	63,727	34,867	28,852	12,390	G. E. NIXON.....	Sault Ste. Marie.....	Lib.
Brantford.....	51,813	31,065	25,703	14,059	J. WRATTEN.....	Brantford.....	P.C.
Brant-Haldimand.....	52,246	29,002	23,546	15,182	J. A. CHARLTON.....	Paris.....	P.C.
Bruce.....	28,658	17,142	14,576	9,610	A. E. ROBINSON.....	Kincardine.....	P.C.
Carleton.....	52,590	57,412	48,929	32,741	R. A. BELL.....	Britannia Bay.....	P.C.
Cochrane.....	42,720	22,199	17,710	7,851	J. A. HABEL.....	Kapuskasing.....	Lib.
Dufferin-Simcoe.....	48,859	24,880	18,967	13,037	Hon. W. E. ROWE.....	Newton Robinson.....	P.C.
Durham.....	35,827	20,980	17,535	9,732	P. VIVIAN.....	Fort Hope.....	P.C.
Elgin.....	59,114	32,954	25,340	17,146	J. A. MCBAIN.....	St. Thomas.....	P.C.
Essex East.....	93,859	52,464	43,588	18,074	Hon. P. MARTIN.....	Windsor.....	Lib.
Essex South.....	51,613	28,399	23,640	14,326	R. D. THRASHER.....	Amherstburg.....	P.C.
Essex West.....	99,918	55,688	42,173	18,927	N. L. SPENCER.....	Windsor.....	P.C.
Fort William.....	51,450	29,129	25,131	9,915	H. BADANAL.....	Fort William.....	Lib.
Glengarry-Prescott.....	44,984	24,345	20,400	10,385	O. F. VILLENEUVE.....	Maxville.....	P.C.
Grenville-Dundas.....	37,541	22,103	15,737	10,793	A. C. CASSELMAN ¹	Prescott.....	P.C.
Grey-Bruce.....	36,200	21,686	18,280	11,878	E. A. WINKLER.....	Hanover.....	P.C.
Grey North.....	38,183	23,217	19,633	12,240	P. V. NOBLE.....	Shallow Lake.....	P.C.
Halton.....	68,297	43,467	34,960	21,056	A. BEST.....	Georgetown.....	P.C.
Hamilton East.....	67,147	39,537	29,897	15,046	Q. MARTIN.....	Hamilton.....	P.C.
Hamilton South.....	97,438	58,689	45,777	24,453	R. M. T. McDONALD.....	Hamilton.....	P.C.
Hamilton West.....	72,232	42,259	31,094	19,863	Hon. ELLEN FAIRCLOUGH.....	Hamilton.....	P.C.
Hastings-Frontenac.....	46,950	27,096	20,257	13,983	Hon. S. E. SMITH ²	Ottawa.....	P.C.

¹ Died May 11, 1958; see Table 12 for by-election.

² Died Mar. 17, 1959; see Table 12 for by-election.

11.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-Fourth General Election, Mar. 31, 1958, and Revised to Jan. 31, 1960—continued.

Province and Electoral District	Population, Census 1956	Voters on List	Total Votes Polled	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
Ontario—concluded							
Hastings South.....	62,804	34,830	29,381	17,849	L. GRILLS.....	Belleville.....	P.C.
Huron.....	46,426	25,311	21,881	14,108	E. CARDIFF.....	Brussels.....	P.C.
Kenora-Rainy River...	67,356	33,138	27,493	11,956	W. M. BENDICKSON...	Kenora.....	L-Lab.
Kent.....	63,212	38,108	31,462	17,348	H. W. DANFORTH.....	Blenheim.....	P.C.
Kingston.....	65,680	38,701	33,025	16,989	B. ALLMARK.....	Kingston.....	P.C.
Lambton-Kent.....	41,220	23,583	18,735	12,835	E. J. CAMPBELL.....	Wallaceburg.....	P.C.
Lambton West.....	67,350	37,967	29,509	16,603	J. W. MURPHY.....	Camlachie.....	P.C.
Lanark.....	37,903	22,204	16,557	12,116	G. H. DOUCETT.....	Carleton Place.....	P.C.
Leeds.....	43,199	25,583	22,040	12,675	H. STANTON.....	Seeley's Bay.....	P.C.
Lincoln.....	111,740	64,403	51,627	29,958	J. SMITH.....	St. Catharines.....	P.C.
London.....	74,865	46,777	36,399	24,276	G. E. HALPENNY.....	London.....	P.C.
Middlesex East.....	78,524	45,085	36,351	24,896	H. O. WHITE.....	Glanworth.....	P.C.
Middlesex West.....	37,508	21,786	18,033	11,974	W. H. A. THOMAS.....	Strathroy.....	P.C.
Niagara Falls.....	70,950	40,348	30,956	14,025	W. L. HOUCK.....	Niagara Falls.....	Lib.
Nickel Belt.....	60,098	29,774	25,363	11,866	O. J. GODIN.....	Sudbury.....	Lib.
Nipissing.....	58,258	31,977	26,940	15,046	J. R. GARLAND.....	North Bay.....	Lib.
Northfolk.....	46,122	25,250	19,970	12,369	J. E. KNOWLES.....	Langton.....	P.C.
Northumberland.....	38,205	22,897	19,708	12,517	B. THOMPSON.....	Brighton.....	P.C.
Ontario.....	99,039	58,844	46,611	26,887	Hon. M. SFAHR.....	Oshawa.....	P.C.
Ottawa East.....	52,473	33,372	28,259	17,161	J. T. RICHARD.....	Ottawa.....	Lib.
Ottawa West.....	68,255	44,767	37,913	19,098	G. McILRAITH.....	Ottawa.....	Lib.
Oxford.....	65,228	36,986	29,714	22,079	W. NESBITT.....	Woodstock.....	P.C.
Parry Sound-Muskoka...	52,556	30,517	24,342	14,888	G. H. AIKEN.....	Gravenhurst.....	P.C.
Peel.....	83,108	49,934	38,846	23,379	J. PALLETTE.....	Port Credit.....	P.C.
Perth.....	53,410	32,294	26,245	18,295	Hon. J. W. MONTEITH.....	Stratford.....	P.C.
Peterborough.....	59,729	36,216	28,818	19,032	G. K. FRASER.....	Lakefield.....	P.C.
Port Arthur.....	78,111	39,784	31,794	12,217	D. M. FISHER.....	Port Arthur.....	C.C.F.
Prince Edward-Lennox...	35,666	20,342	15,361	10,783	C. A. MILLIGAN.....	Napanee.....	P.C.
Renfrew North.....	45,802	23,543	20,821	10,425	J. M. FORGIE.....	Pembroke.....	Lib.
Renfrew South.....	34,403	19,439	17,498	9,259	J. W. BASKIN.....	Renfrew.....	Lib.
Russell.....	58,306	50,514	43,380	21,575	J. O. GOUR.....	Casselman.....	Lib.
Simcoe East.....	54,006	29,164	24,153	15,149	P. B. RYNARD.....	Orillia.....	P.C.
Simcoe North.....	40,754	25,051	19,947	13,855	H. SMITH.....	Barrie.....	P.C.
Stormont.....	56,452	31,867	26,637	13,964	G. CAMPBELL.....	Cornwall.....	P.C.
Sudbury.....	67,888	37,631	31,970	16,216	R. MITCHELL.....	Sudbury.....	Lib.
Timiskaming.....	49,891	25,420	21,159	7,544	A. PETERS.....	New Liskeard.....	C.C.F.
Timmins.....	45,469	23,286	19,493	7,342	M. MARTIN.....	Timmins.....	C.C.F.
Victoria.....	45,661	28,660	22,580	16,080	C. W. HODGSON.....	Haliburton.....	P.C.
Waterloo North.....	95,256	57,292	45,273	24,526	O. W. M. WEICHEL.....	Elmira.....	P.C.
Waterloo South.....	53,518	32,330	26,135	15,624	W. ANDERSON.....	Calt.....	P.C.
Welland.....	78,656	44,365	36,420	15,365	W. H. McMILLAN.....	Thorold.....	Lib.
Wellington-Huron.....	31,712	18,493	15,666	10,574	M. HOWE.....	Arthur.....	P.C.
Wellington South.....	50,928	30,372	25,814	15,160	A. D. HALES.....	Guelph.....	P.C.
Wentworth.....	79,421	47,532	36,778	23,854	F. E. LENNARD.....	Dundas.....	P.C.
York Centre.....	127,591	80,081	58,628	30,764	F. C. STINSON.....	Willowdale.....	P.C.
York East.....	73,284	49,428	37,728	22,900	R. H. MCGREGOR.....	Toronto.....	P.C.
York-Humber.....	78,202	51,339	40,008	23,723	MARGARET AITKEN.....	Toronto.....	P.C.
York North.....	70,595	45,201	34,178	21,499	C. A. CATHERS.....	Newmarket.....	P.C.
York-Scarborough.....	167,310	112,628	89,439	57,396	F. MCGEE.....	Don Mills.....	P.C.
York South.....	105,979	65,785	47,229	22,980	W. G. BEECH.....	Toronto.....	P.C.
York West.....	110,050	72,484	57,544	34,208	J. B. HAMILTON.....	Etobicoke.....	P.C.
City of Toronto—							
Broadview.....	57,494	34,720	24,296	15,364	Hon. G. HEES.....	Toronto.....	P.C.
Danforth.....	64,617	54,839	41,534	24,139	R. H. SMALL.....	Toronto.....	P.C.
Davenport.....	62,430	32,641	25,307	12,117	M. D. MORTON.....	Toronto.....	P.C.
Eglinton.....	71,271	52,098	41,091	28,565	Hon. D. M. FLEMING.....	Toronto.....	P.C.
Greenwood.....	56,637	35,551	26,573	16,284	Hon. J. M. MACDONNELL.....	Toronto.....	P.C.
High Park.....	59,850	35,454	27,821	14,289	J. W. KUCHEREPA.....	Toronto.....	P.C.
Parkdale.....	56,650	34,790	26,456	13,640	A. MALONEY.....	Toronto.....	P.C.
Rosedale.....	55,088	33,519	24,826	15,429	Hon. D. J. WALKER.....	Toronto.....	P.C.
St. Paul's.....	54,262	40,656	28,590	18,213	Hon. R. MICHENER.....	Toronto.....	P.C.
Spadina.....	85,490	43,310	29,893	14,616	C. E. REA.....	Toronto.....	P.C.
Trinity.....	63,801	31,385	22,915	10,203	E. R. LOCKYER ²	Toronto.....	P.C.

¹ Died Mar. 24, 1959; see Table 12 for by-election.

² Died Oct. 5, 1958; see Table 12 for by-election.

11.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-Fourth General Election, Mar. 31, 1958, and Revised to Jan. 31, 1960—continued.

Province and Electoral District	Population, Census 1956	Voters on List	Total Votes Polled	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
Manitoba—							
(14 members)							
Brandon-Souris.....	62,365	36,921	30,152	22,185	W. G. DINSDALE.....	Brandon.....	P.C.
Churchill.....	48,999	22,856	17,994	11,506	R. SIMPSON.....	Flin Flon.....	P.C.
Dauphin.....	41,304	22,299	18,835	8,674	R. E. FORBES.....	Dauphin.....	P.C.
Lisgar.....	46,756	25,291	19,703	13,072	G. MUIR.....	Roland.....	P.C.
Marquette.....	49,190	26,009	23,015	14,748	N. MANDZIUK.....	Oakburn.....	P.C.
Portage-Neepawa.....	55,875	28,338	23,448	15,304	G. C. FAIRFIELD.....	Portage la Prairie.....	P.C.
Provencher.....	40,658	20,220	15,290	8,278	W. H. JORGENSEN.....	Ste. Elizabeth.....	P.C.
St. Boniface.....	59,422	34,754	29,033	12,688	L. RÉGNIER.....	St. Boniface.....	P.C.
Selkirk.....	49,047	23,775	18,767	8,878	E. STEFANSON.....	Gimli.....	P.C.
Springfield.....	41,814	21,545	16,743	7,045	V. YACULA.....	Winnipeg.....	P.C.
Winnipeg North.....	97,945	59,385	46,833	19,629	M. SMITH.....	Winnipeg.....	P.C.
Winnipeg North Centre.....	77,917	44,625	32,445	14,911	J. MACLEAN.....	Winnipeg.....	P.C.
Winnipeg South.....	98,248	62,091	51,478	32,308	G. CHOWN.....	Winnipeg.....	P.C.
Winnipeg South Centre.....	80,500	53,443	41,912	27,722	Hon. G. CHURCHILL.....	Winnipeg.....	P.C.
Saskatchewan—							
(17 members)							
Assiniboia.....	46,444	25,446	21,729	9,104	H. R. ARGUE*.....	Kayville.....	C.C.F.
Humboldt-Melfort.....	49,221	25,644	20,203	9,975	R. RAPP.....	Spalding.....	P.C.
Kindersley.....	47,724	26,043	21,434	8,935	R. L. HANBIDGE.....	Kerrobert.....	P.C.
Mackenzie.....	45,971	22,421	17,281	9,138	S. J. KORCHINSKI.....	Rama.....	P.C.
Meadow Lake.....	37,840	17,704	12,922	6,830	A. C. CADIEU.....	Spiritwood.....	P.C.
Melville.....	42,219	22,752	19,925	8,440	J. N. ORMISTON.....	Cupar.....	P.C.
Moose Jaw-Lake Centre.....	64,947	37,274	31,627	18,736	J. E. PASCOE.....	Moose Jaw.....	P.C.
Moose Mountain.....	42,897	24,673	20,253	9,287	R. R. SOUTHAM.....	Gainsborough.....	P.C.
Prince Albert.....	56,121	28,825	23,107	16,583	Rt. Hon. J. G. DIFEN- BAKER*.....	Prince Albert.....	P.C.
Qu'Appelle.....	39,894	21,168	17,931	10,514	Hon. A. HAMILTON.....	Saskatoon.....	P.C.
Regina City.....	81,235	52,182	45,123	24,424	K. H. MORE.....	Regina.....	P.C.
Rosetown-Biggar.....	45,303	25,619	21,022	9,962	C. O. COOPER.....	Hawarden.....	P.C.
Rosthern.....	48,815	24,000	17,765	8,166	E. NASSERDEN.....	Warman.....	P.C.
Saskatoon.....	73,154	48,945	40,732	24,622	H. F. JONES.....	Saskatoon.....	P.C.
Swift Current-Maple Creek.....	55,313	31,487	25,823	11,618	J. McINTOSH.....	Swift Current.....	P.C.
The Battlefords.....	52,300	26,355	20,430	10,970	A. HORNER.....	Blaine Lake.....	P.C.
Yorkton.....	51,267	27,601	22,642	9,882	G. D. CLANCY.....	Raymore.....	P.C.
Alberta—							
(17 members)							
Acadia.....	46,105	24,961	19,287	9,669	J. H. HORNER.....	Pollockville.....	P.C.
Athabasca.....	56,611	25,778	18,944	9,751	F. J. BIGG.....	Westlock.....	P.C.
Battle River-Camrose.....	57,576	30,103	22,828	13,049	C. S. SMALLWOOD.....	Irma.....	P.C.
Bow River.....	47,454	25,690	20,229	12,695	E. M. WOOLLIAMS.....	Calgary.....	P.C.
Calgary North.....	98,777	59,626	43,367	30,930	Hon. D. S. HARKNESS.....	Calgary.....	P.C.
Calgary South.....	95,245	57,290	42,210	29,482	A. SMITH.....	Calgary.....	P.C.
Edmonton East.....	70,755	40,322	28,319	15,236	W. SKOREYKO.....	Edmonton.....	P.C.
Edmonton-Strathcona.....	91,293	54,429	42,531	25,885	T. NUGENT.....	Edmonton.....	P.C.
Edmonton West.....	106,778	61,781	46,763	30,937	M. LAMBERT.....	Edmonton.....	P.C.
Jasper-Edson.....	62,652	32,339	22,000	12,522	H. M. HORNER.....	Barhead.....	P.C.
Lethbridge.....	62,332	28,764	23,101	13,364	D. R. GUNDLOCK.....	Warner.....	P.C.
Macleod.....	50,177	25,415	20,289	11,911	L. E. KINTD.....	High River.....	P.C.
Medicine Hat.....	56,918	30,150	23,662	10,886	E. W. BRUNSDEN.....	Brooks.....	P.C.
Peace River.....	69,725	34,262	22,800	13,328	G. W. BALDWIN.....	Peace River.....	P.C.
Red Deer.....	52,075	28,614	21,311	11,569	H. ROGERS.....	Red Deer.....	P.C.
Vegreville.....	45,322	23,641	17,091	7,918	F. J. W. FANE.....	Mundare.....	P.C.
Wetaskiwin.....	53,321	25,555	18,245	10,557	J. S. SPEARMAN.....	Wetaskiwin.....	P.C.
British Columbia—							
(22 members)							
Burnaby-Coquitlam.....	67,202	39,681	30,179	12,917	E. REGIER.....	East Burnaby.....	C.C.F.
Burnaby-Richmond.....	73,030	41,357	34,284	15,570	J. DRYSDALE.....	Burnaby 1.....	P.C.
Cariboo.....	60,464	32,474	21,778	9,327	W. C. HENDERSON.....	Rolla.....	P.C.
Coast-Capilano.....	91,051	56,211	44,698	19,343	W. H. PAYNE.....	West Vancouver.....	P.C.
Comox-Alberni.....	65,414	33,454	25,114	11,483	H. C. McQUILAN.....	Courtenay.....	P.C.
Esquimalt-Saanich.....	59,812	37,371	28,937	18,768	Hon. G. R. PEARKES.....	Saanich.....	P.C.
Fraser Valley.....	75,518	40,464	31,696	13,890	H. HICKS.....	Chilliwack.....	P.C.

* Died Sept. 25, 1958; see Table 12 for by-election.

11.—Electoral Districts, Voters on List and Votes Polled, Names and Addresses of Members of the House of Commons as Elected at the Twenty-Fourth General Election, Mar. 31, 1958, and Revised to Jan. 31, 1960—concluded.

Province or Territory and Electoral District	Population, Census 1956	Voters on List	Total Votes Polled	Votes Polled by Member	Name of Member	P.O. Address	Party Affiliation
	No.	No.	No.	No.			
British Columbia—concluded							
Kamloops.....	59,139	31,202	22,036	13,858	Hon. E. D. FULTON.....	Kamloops.....	P.C.
Kootenay East.....	36,845	19,154	16,162	5,363	M. L. McFARLANE.....	Cranbrook.....	P.C.
Kootenay West.....	53,633	28,024	21,897	9,460	H. W. HERRIDGE.....	Nakusp.....	C.C.F.
Nanaimo.....	52,805	31,184	24,616	10,734	W. F. MERRIDGES.....	Nanaimo.....	P.C.
New Westminster.....	104,632	66,614	51,162	21,202	W. A. McLENNAN.....	New Westminster.....	P.C.
Okanagan Boundary.....	58,903	33,275	27,115	13,065	D. V. PUGH.....	Oliver.....	P.C.
Okanagan-Revelstoke.....	32,744	17,742	14,710	7,004	S. FLEMING.....	Vernon.....	P.C.
Skeena.....	56,664	22,283	16,858	6,647	F. HOWARD.....	Terrace.....	C.C.F.
Vancouver-Burrard.....	59,862	42,155	29,978	18,001	J. TAYLOR.....	Vancouver.....	P.C.
Vancouver Centre.....	43,346	35,792	23,163	14,044	D. JUNG.....	Vancouver.....	P.C.
Vancouver East.....	57,302	34,152	23,913	11,486	H. E. WINCH.....	Vancouver.....	C.C.F.
Vancouver-Kingsway.....	61,720	38,270	28,132	11,928	J. F. BROWNE.....	Vancouver.....	P.C.
Vancouver Quadra.....	69,103	45,190	35,316	24,802	Hon. H. C. GREEN.....	Vancouver.....	P.C.
Vancouver South.....	77,716	48,907	37,093	22,292	E. J. BROOME.....	Vancouver.....	P.C.
Victoria.....	81,559	52,281	41,145	24,945	A. D. McPHILLIPS.....	Victoria.....	P.C.
Yukon Territory—(1 member)							
Yukon.....	12,190	6,071	5,469	2,947	E. NIELSEN.....	Whitehorse.....	P.C.
Northwest Territories—(1 member)							
Mackenzie River.....	12,492	6,716	4,945	2,782	M. A. HARDIE.....	Yellowknife.....	Lib.

12.—By-elections from the Date of the Twenty-Fourth General Election, Mar. 31, 1958, to Jan. 31, 1960¹

Electoral District and Province	Date of By-election	Voters on List	Candidates	Votes Polled	Name of New Member	P.O. Address	Party Affiliation
		No.	No.	No.			
Montmagny-L'Islet, Que.....	Sept. 29, 1958	20,199	2	14,456	LOUIS FORTIN.....	Quebec.....	P.C.
Grenville-Dundas, Ont.....	Sept. 29, 1958	22,113	2	15,812	JEAN CASSELMAN.....	Prescott.....	P.C.
Toronto-Trinity, Ont.....	Dec. 15, 1958	28,693	4	12,017	PAUL T. HELLYER.....	Toronto.....	Lib.
Springfield, Man.....	Dec. 15, 1958	21,809	3	11,512	JOE SLOGAN.....	East Selkirk.....	P.C.
Hastings-Frontenac, Ont.....	Oct. 5, 1959	27,069	2	12,533	ROD WEBB.....	Norwood.....	P.C.
Russell, Ont.....	Oct. 5, 1959	53,954	3	36,607	PAUL TARDIF.....	Ottawa.....	Lib.

¹ By-elections from Jan. 31, 1960 to the date of going to press are included in an Appendix to this volume.

Indemnities and Allowances.—Members of the Senate receive a sessional allowance at the rate of \$8,000 per annum. In addition they receive at the end of each calendar year an annual expense allowance of \$2,000 which is subject to income tax. Members of the House of Commons are paid a sessional allowance at the rate of \$8,000 per annum. In addition they receive \$2,000 as an expense allowance paid at the end of each calendar year. This allowance, except that for Ministers of the Crown and for Leaders of the Opposition in the House and in the Senate, is not subject to income tax. The remuneration of the Prime Minister is \$25,000 a year and of a Cabinet Minister and the Leader of the Opposition \$15,000 a year in addition to the sessional allowance and expense allowance each receives as a Member of Parliament. A Cabinet Minister is also entitled to a motor car allowance of \$2,000. The remuneration of a Minister without Portfolio is \$7,500 a year in addition to the sessional allowance and expense allowance, the latter taxable. The Speaker of the Senate and of the House of Commons each receives, besides the sessional

allowance and expense allowance, a salary of \$9,000 and a motor car allowance of \$1,000 and each is entitled to \$3,000 in lieu of a residence. The Deputy Speaker of the House of Commons receives a salary of \$6,000 and an allowance of \$1,500 in lieu of a residence. The Deputy Chairman of Committees receives an annual allowance of \$2,000. Parliamentary Assistants to the Ministers of the Crown receive \$8,000 sessional allowance. Members of Parliament, \$4,000 a year as Parliamentary Assistants and the \$2,000 expense allowance paid to all Members of Parliament.

The Federal Franchise.—The present federal franchise laws are contained in the Canada Elections Act (RSC 1952, c. 23). The franchise is conferred upon all Canadian citizens or British subjects, men and women, who have attained the age of 21 years and who have been ordinarily resident in Canada for 12 months prior to polling day at a federal election and ordinarily resident in the electoral district on the date of the issue of the writ ordering such election. Persons denied the right to vote are:—

- (1) The Chief Electoral Officer and the Assistant Chief Electoral Officer;
- (2) Judges appointed by the Governor General in Council;
- (3) The returning officer for each electoral district;
- (4) Persons undergoing punishment as inmates of any penal institution for the commission of any offence;
- (5) Persons restrained of their liberty or deprived of the management of their property by reason of mental disease;
- (6) Persons disqualified under any law relating to the disqualification of electors for corrupt and illegal practices.

Until Mar. 31, 1960, the list of persons denied the right to vote included "Indians ordinarily resident on an Indian reserve who were not members of His Majesty's Forces in World Wars I or II or who did not execute a waiver of exemption under the Indian Act from taxation on and in respect of personal property". Legislation passed by Parliament on the above-mentioned date* confers upon all Indians who have attained the age of 21 years, the right to vote at federal elections, without taking from them any of the rights and privileges to which they are entitled under the Indian Act.

The Canadian Forces Voting Regulations set out in Schedule III to the Canada Elections Act prescribe voting procedure for members of the Armed Forces of Canada and also for veterans in receipt of treatment or domiciliary care in certain institutions.

* Act not yet proclaimed at date of going to press.

13.—Voters on the Lists and Votes Polled at the Federal General Elections of 1949, 1953, 1957 and 1958

NOTE.—Corresponding statistics for the general elections of 1911, 1917, 1921 and 1925 are given in the 1926 Year Book, p. 82; those for 1926 in the 1945 edition, p. 66; those for 1930 and 1935 in the 1948-49 edition, p. 94; those for 1940 in the 1956 edition, p. 81; and those for 1945 in the 1957-58 edition, p. 57.

Province or Territory	Voters on the Lists				Votes Polled			
	1949	1953	1957 ^r	1958	1949	1953	1957 ^r	1958
	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	182,439	194,715	197,657	204,778	105,190	111,768	92,986	160,928
Prince Edward Island.....	55,772	55,469	54,237	54,200	68,393 ¹	66,562 ¹	67,221 ¹	69,302
Nova Scotia.....	373,585	380,836	381,486	390,196	338,928 ²	334,855 ²	394,224 ²	418,479
New Brunswick.....	286,723	287,657	291,185	294,387	225,877	225,390	236,997	249,706
Quebec.....	2,177,152	2,352,619	2,509,695	2,576,682	1,610,510	1,565,262 ^r	1,813,541	2,045,199
Ontario.....	2,718,118	2,894,150	3,100,943	3,189,422	2,042,294	1,938,959	2,295,124	2,534,555
Manitoba.....	451,882	465,374	474,068	481,552	324,079	276,422	351,909	385,648
Saskatchewan.....	472,884	480,532	484,355	488,139	375,471	356,479	392,329	399,949
Alberta.....	492,228	548,747	591,114	608,820	341,222	343,258	431,234	452,977
British Columbia.....	673,782	730,882	802,440	830,237	464,785	475,456	596,190	629,982
Yukon Territory ³	9,064	5,028	5,514	6,071	6,823	3,818	4,892	5,469
Northwest Territories ⁴.....	...	5,682	6,431	6,716	...	3,596	4,043	4,945
Totals.....	7,893,629	8,401,691	8,902,125	9,131,200	5,903,572	5,701,825^r	6,680,690	7,357,139

¹ Each voter in the double-member constituency of Queens County, P.E.I., had two votes; in 1958, 24,930 voters on the list cast 42,954 votes.

² Each voter in the double-member constituency of Halifax, N.S., had two votes; in 1958, 112,253 voters on the list cast 179,287 votes.

³ Electoral District of Yukon.

⁴ Electora

District of Mackenzie River.

Subsection 3.—The Judiciary

The Federal Judiciary

The Parliament of Canada is empowered by Sect. 101 of the British North America Act to provide from time to time for the constitution, maintenance and organization of a general Court of Appeal for Canada and for the establishment of any additional courts for the better administration of the laws of Canada. Under this provision, Parliament has established the Supreme Court of Canada, the Exchequer Court of Canada and certain miscellaneous courts.

Supreme Court of Canada.—This Court, first established in 1875 and now governed by the Supreme Court Act (RSC 1952, c. 259), consists of a chief justice, who is called the Chief Justice of Canada, and eight puisne judges. The chief justice and the puisne judges are appointed by the Governor in Council and they hold office during good behaviour but are removable by the Governor General on address of the Senate and the House of Commons. They cease to hold office upon attaining the age of 75 years. The Court sits at Ottawa and exercises general appellate jurisdiction throughout Canada in civil and criminal cases. The Court is also required to consider and advise upon questions referred to it by the Governor in Council and it may also advise the Senate or the House of Commons on private Bills referred to the Court under any rules or orders of the Senate or of the House of Commons.

Appeals may be brought from any final judgment of the highest court of final resort in a province in any case where the amount or value of the matter in controversy exceeds the sum of \$10,000. An appeal may be brought from any other final judgment with leave of the highest court of final resort in the province; if such court refuses to grant leave the Supreme Court of Canada may grant leave to appeal. The Supreme Court may grant leave to appeal from any judgment whether final or not. Appeals in respect of indictable offences are regulated by the Criminal Code. Appeals from federal courts are regulated by the statute establishing such courts. The judgment of the Supreme Court of Canada in all cases is final and conclusive.

14.—Chief Justice and Judges of the Supreme Court of Canada, as at Jan. 31, 1960

(In order of seniority)

Name	Date of Appointment
Hon. Chief Justice PATRICK KERWIN.....	July 1, 1954 ¹
Hon. Justice ROBERT TASCHEREAU.....	Feb. 9, 1940
Hon. Justice CHARLES H. LOCKE.....	June 3, 1947
Hon. Justice JOHN R. CARTWRIGHT.....	Dec. 23, 1949
Hon. Justice J. H. GERALD FAUTEUX.....	Dec. 23, 1949
Hon. Justice DOUGLAS CHARLES ABBOTT.....	July 1, 1954
Hon. Justice RONALD MARTLAND.....	Jan. 15, 1958
Hon. Justice WILFRED JUDSON.....	Feb. 5, 1958
Hon. Justice ROLAND A. RITCHIE.....	May 5, 1959

¹ First appointed as a Judge of the Supreme Court, July 20, 1935.

Exchequer Court of Canada.—The Exchequer Court was first established in 1875 as part of the Supreme Court of Canada but is now a separate court governed by the Exchequer Court Act (RSC 1952, c. 98). The Court consists of a president and four puisne judges who are appointed by the Governor in Council. The president and the puisne judges hold office during good behaviour but may be removed by the Governor General on address of the Senate and the House of Commons. They cease to hold office upon attaining the age of 75 years. The Court sits at Ottawa and also at any other place in Canada where sittings may be fixed by the Court. The jurisdiction of the Court extends to cases where claims are made by or against the Crown in right of Canada. Proceedings against the Crown are taken by petition of right pursuant to the Petition of Right Act (RSC 1952, c. 210).

An appeal lies to the Supreme Court of Canada from any final judgment of the Exchequer Court in which the amount in controversy exceeds \$500; an appeal also lies with leave of the Supreme Court in certain cases where the amount in controversy does not exceed \$500 or where the judgment is not final.

The Exchequer Court also exercises admiralty jurisdiction in Canada. This was first conferred in 1891 by the Admiralty Act (SC 1891, c. 29) and is now governed by the Admiralty Act (RSC 1952, c. 1). Under this statute the Exchequer Court is continued as a Court of Admiralty. The president and puisne judges of the Exchequer Court exercise admiralty jurisdiction throughout the whole of Canada. In addition, Canada is divided into various admiralty districts; a district judge in admiralty is appointed for each district. Appeals to the Supreme Court of Canada from judgments of the president or the puisne judges are governed by the general appeal provisions in the Exchequer Court Act. Appeals may be taken from a final judgment of a district judge in admiralty either to the Exchequer Court or direct to the Supreme Court of Canada.

Miscellaneous Courts.—*Railway Act.*—The Railway Act, 1903 (RSC 1952, c. 234), established the Board of Railway Commissioners for Canada as a court of record; by the Transport Act, 1938 (RSC 1952, c. 271) the name was changed to the Board of Transport Commissioners for Canada. This Court exercises jurisdiction with respect to railway matters. The Governor in Council is given jurisdiction to vary any order of the Board and an appeal lies from the Board to the Supreme Court of Canada upon a question of jurisdiction or a question of law.

Bankruptcy Act.—By virtue of Sect. 91 (21) of the British North America Act, 1867, Parliament has exclusive legislative jurisdiction in relation to bankruptcy and insolvency. By the Bankruptcy Act (RSC 1952, c. 14) the superior courts of the provinces are constituted bankruptcy courts; original jurisdiction is conferred upon the trial courts and appellate jurisdiction is conferred upon the appeal courts of the provinces.

Income Tax Act and Estate Tax Act.—By the Income Tax Act (RSC 1952, c. 148) the Tax Appeal Board is established consisting of a chairman and not fewer than two or more than four members with jurisdiction over appeals against income tax assessments. A further appeal may be taken to the Exchequer Court. Under the Estate Tax Act (SC 1958, c. 29) the Tax Appeal Board also has jurisdiction to hear appeals from assessments under that Act.

Provincial and Territorial Judiciaries*

Certain provisions of the British North America Act govern to some extent the provincial judiciaries. Under Sect. 92 (14) the legislature of each province exclusively may make laws in relation to the administration of justice in the province including the constitution, maintenance and organization of provincial courts both of civil and of criminal jurisdiction. Sect. 96 provides that the Governor General shall appoint the judges of the superior, district and county courts in each province, except those of the courts of probate in Nova Scotia and New Brunswick. Sect. 100 provides that the salaries, allowances and pensions of judges of the superior, district and county courts (except the courts of probate in Nova Scotia and New Brunswick) are to be fixed and provided by the Parliament of Canada and these are set out in the Judges Act (RSC 1952, c. 159). Under Sect. 99 the judges of the superior courts hold office during good behaviour but are removable by the Governor General on address of the Senate and the House of Commons. The tenure of office of district and county court judges is fixed by the Judges Act as being during good behaviour and their residence within the county or union of counties for which the court is established.

All provinces have minor courts with limited civil and criminal jurisdiction, the judges of which are appointed by provincial authority as, for example, justices of the peace, magistrates and juvenile court judges. Except in Quebec there are county or district courts of each province with limited jurisdiction varying from \$500 to \$2,500

* More detailed information concerning provincial judiciaries is given in the 1954 Year Book, pp. 48-55.

in amount. Each province has a superior court with virtually unlimited jurisdiction variously known as Court of Queen's Bench, Supreme Court, Superior Court, etc. There is also a Court of Appeal in each province.

The Yukon Act and the Northwest Territories Act each provide for a superior court of record in and for the Territory, called the Territorial Court, and consisting of one or more judges appointed by the Governor in Council. The judges of the Territorial Court of the Yukon Territory are *ex officio* judges of the Territorial Court of the Northwest Territories. The superior courts of adjacent provinces exercise certain concurrent jurisdiction in civil matters. Police magistrates and justices of the peace have jurisdiction in minor civil and criminal cases.

Section 2.—Provincial and Territorial Governments*

In each of the provinces, the Queen is represented by a Lieutenant-Governor appointed by the Governor General in Council. The Lieutenant-Governor acts on the advice and with the assistance of his Ministry or Executive Council which is responsible to the Legislature and resigns office under circumstances similar to those described on pp. 85-86 concerning the Federal Government.

The Legislature of each province is unicameral, consisting of the Lieutenant-Governor and a Legislative Assembly, except for the Province of Quebec where there is a Legislative Council as well as a Legislative Assembly.

The Legislative Assembly is elected by the people for a statutory term of five years but may be dissolved within that period by the Lieutenant-Governor on the advice of the Premier of the province.

The source of legislative authority of the Provincial Legislatures is the British North America Act, 1867 (U.K. Stat. 1867, c. 3 and amendments). Under Sect. 92 of the Act the Legislature of each province exclusively may make laws in relation to the following matters: amendment of the constitution of the province except as regards the Lieutenant-Governor; direct taxation within the province; borrowing of money on the credit of the province; establishment and tenure of provincial offices and appointment and payment of provincial officers; the management and sale of public lands belonging to the province and of the timber and wood thereon; the establishment, maintenance and management of public and reformatory prisons in and for the province; the establishment, maintenance and management of hospitals, asylums, charities and eleemosynary institutions in and for the province, other than marine hospitals; municipal institutions in the province; shop, saloon, tavern, auctioneer and other licences issued for the raising of provincial or municipal revenue; local works and undertakings other than interprovincial or international lines of ships, railways, canals, telegraphs, etc., or works which, though wholly situated within one province, are declared by the Federal Parliament to be for the general advantage either of Canada or of two or more provinces; the incorporation of companies with provincial objects; the solemnization of marriage in the province; property and civil rights in the province; the administration of justice in the province including the constitution, maintenance and organization of provincial courts both of civil and of criminal jurisdiction including procedure in civil matters in these courts; the imposition of punishment by fine, penalty or imprisonment for enforcing any law of the province relating to any of the aforesaid subjects; generally all matters of a merely local or private nature in the province.

Further, in and for each province the Legislature exclusively may, under Sect. 93, make laws in relation to education subject to certain restrictions relating to the establishment of schools by religious minorities. These powers with similar restrictions were conferred on the more recently admitted provinces on their inclusion as units in the federation.

* The information given in Subsections 1 to 9 of this Section is brought up to Oct. 31, 1959. Provincial elections held between that date and the date of going to press are carried in an Appendix to this volume.

The Provincial Legislatures may also make laws under Sect. 95 in relation to agriculture and immigration, subject to any laws of the Parliament of Canada in relation to these subjects.

Provincial Franchise.—Details regarding qualifications and disqualifications of the franchise are contained in the Elections Act of each province. In general, every person male or female, at the age of 21 years who is a Canadian citizen or a British subject, who complies with certain residence requirements in the province and the electoral district of polling and who falls under no statutory disqualifications, is entitled to vote. These qualifications apply with modifications to voters in most provinces. The principal exceptions give voting privileges to persons in Saskatchewan at the age of 18 and in Alberta and British Columbia at 19 years.

Subsection 1.—Newfoundland

The Government of Newfoundland consists of a Lieutenant-Governor, an Executive Council and a Legislative Assembly. The Legislative Assembly has 36 members elected for a term of five years. The Legislature elected Aug. 20, 1959 is the 32nd in the history of Newfoundland and the 4th since Confederation.

Since the date of Confederation, Mar. 31, 1949, the province has had three Lieutenant-Governors: the Hon. Sir Albert Joseph Walsh commissioned Apr. 1, 1949; the Hon. Lt.-Col. Sir Leonard Outerbridge commissioned Sept. 5, 1949; and the Hon. Campbell Macpherson commissioned Dec. 16, 1959. The first Ministry, formed on July 13, 1949 under the leadership of the Hon. Joseph R. Smallwood, was still in office on Oct. 31, 1959.

The Premier receives a salary of \$10,000 and the other Cabinet Ministers \$9,000 per annum, plus a sessional indemnity of \$3,333.33. Each member of the House of Assembly receives a sessional indemnity of \$3,333.33 plus a travelling and expense allowance of \$1,666.66. An additional allowance of \$3,000 is made to the Leader of the Opposition.

15.—First Ministry of Newfoundland, as at Oct. 31, 1959

(Party standing at latest General Election, Aug. 20, 1959: 31 Liberal, 3 Progressive Conservative and 2 United Newfoundland.)

Office	Name	Date of First Appointment	Date of Present Appointment ¹
Premier and Minister of Economic Development.....	Hon. J. R. SMALLWOOD.....	Apr. 1, 1949	Apr. 1, 1949
Attorney General.....	Hon. L. R. CURTIS.....	Apr. 1, 1949	Apr. 1, 1949
Minister of Mines and Resources.....	Hon. W. J. KEOUGH.....	July 29, 1949	May 1, 1957
Minister of Labour.....	Hon. C. H. BALLAM.....	Apr. 4, 1950	Apr. 4, 1950
Minister of Public Welfare and Minister of Health.....	Hon. J. M. McGRATH.....	July 5, 1956	(July 5, 1956 May 1, 1957)
Minister of Finance.....	Hon. E. S. SPENCER.....	July 29, 1949	May 1, 1957
Minister of Public Works.....	Hon. J. R. CHALKER.....	Apr. 4, 1950	May 1, 1957
Minister of Highways.....	Hon. F. W. ROWE.....	May 21, 1952	May 11, 1959
Minister without Portfolio.....	Hon. P. J. LEWIS.....	Dec. 15, 1951	Dec. 15, 1951
Minister of Provincial Affairs and Solicitor General.....	Hon. MYLES P. MURRAY.....	Dec. 15, 1951	(Dec. 15, 1951 Apr. 10, 1955)
Minister of Fisheries.....	Hon. J. T. CHEESEMAN.....	May 1, 1957	May 1, 1957
Minister of Municipal Affairs and Supply.....	Hon. B. J. ABBOTT.....	May 1, 1957	May 1, 1957
Minister of Education.....	Hon. G. A. FRECKER.....	Aug. 26, 1959	Aug. 26, 1959

¹ Minister not necessarily sworn in on date of appointment.

Subsection 2.—Prince Edward Island

The Government of Prince Edward Island consists of a Lieutenant-Governor, an Executive Council and a Legislative Assembly. The General Assembly elected Sept. 1, 1959 is the 49th in the history of Prince Edward Island Legislatures and the 24th since Confederation. It has 30 members from 15 electoral districts who serve for a statutory term of five years. One-half of the members of the Legislative Assembly are elected on a property vote. Each district elects one Councillor (elected on a property vote) and one Assembly member (elected on a general franchise vote).

The annual salary of the Premier is \$6,000 and that of a Cabinet Minister \$4,000. Each member of the Assembly is paid \$1,450 for each session attended by him and an additional \$500 tax free as indemnity for expenses incurred. The Speaker is paid an additional \$400 and a further additional \$200 tax free as an indemnity. The Leader of the Opposition is paid an additional \$800 and a further additional \$200 tax free for expenses incurred by him in performance of official duties.

16.—Lieutenant-Governors of Prince Edward Island since Confederation, 1873-1959

Name	Date of Commission	Name	Date of Commission
Hon. WILLIAM ROBINSON.....	June 10, 1873	Hon. A. C. MACDONALD.....	June 3, 1915
Hon. Sir ROBERT HODGSON.....	July 4, 1874	Hon. MURDOCK MCKINNON.....	Sept. 2, 1919
Hon. THOMAS H. HAVILAND.....	July 10, 1879	Hon. FRANK R. HEARTZ.....	Sept. 8, 1924
Hon. ANDREW ARCHIBALD MACDONALD	July 18, 1884	Hon. CHARLES DALTON.....	Nov. 19, 1930
Hon. JEDEDIAH S. CARVELL.....	Sept. 2, 1889	Hon. GEORGE D. DEBLOIS.....	Dec. 28, 1933
Hon. GEORGE W. HOWLAN.....	Feb. 21, 1894	Hon. BRADFORD W. LEPAGE.....	Sept. 11, 1939
Hon. P. A. MCINTYRE.....	May 23, 1899	Hon. J. A. BERNARD.....	May 18, 1945
Hon. D. A. MACKINNON.....	Oct. 3, 1904	Hon. T. W. PROWSE.....	Oct. 4, 1950
Hon. BENJAMIN ROGERS.....	June 1, 1910	Hon. F. W. HYNDMAN.....	Mar. 31, 1958

17.—Premiers of Prince Edward Island since Confederation, 1873-1959

Ministry	Name	Date of Formation of Ministry	Ministry	Name	Date of Formation of Ministry
1	Hon. J. C. POPE.....	April 1873	14	Hon. J. H. BELL.....	Sept. 9, 1919
2	Hon. L. C. OWEN.....	September 1873	15	Hon. JAMES D. STEWART.....	Sept. 5, 1923
3	Hon. L. H. DAVIES.....	August 1876	16	Hon. ALBERT C. SAUNDERS.....	Aug. 12, 1927
4	Hon. W. W. SULLIVAN.....	Apr. 25, 1879	17	Hon. WALTER M. LEA.....	May 20, 1930
5	Hon. N. MCLEOD.....	November 1889	18	Hon. JAMES D. STEWART.....	Aug. 29, 1931
6	Hon. F. PETERS.....	Apr. 27, 1891	19	Hon. WILLIAM J. P. MACMILLAN.....	Oct. 14, 1933
7	Hon. A. B. WARBURTON.....	October 1897	20	Hon. WALTER M. LEA.....	Aug. 15, 1935
8	Hon. D. FARQUHARSON.....	August 1898	21	Hon. THANE A. CAMPBELL.....	Jan. 14, 1936
9	Hon. A. PETERS.....	Dec. 29, 1901	22	Hon. J. WALTER JONES.....	May 11, 1943
10	Hon. F. L. HASZARD.....	Feb. 1, 1908	23	Hon. ALEXANDER W. MATHESON.....	May 25, 1953
11	Hon. H. JAMES PALMER.....	May 16, 1911	24	Hon. WALTER R. SHAW.....	Sept. 16, 1959
12	Hon. JOHN A. MATHESON.....	Dec. 2, 1911			
13	Hon. AUBIN E. ARSENAULT.....	June 21, 1917			

18.—Legislatures of Prince Edward Island, 1935-59, as at Oct. 31, 1959

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 75, and for 1924-35 in the 1938 edition, p. 110.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
July 23, 1935	18th.....	5	Sept. 25, 1935	Apr. 21, 1939
May 18, 1939	19th.....	4	Mar. 20, 1940	Aug. 20, 1943
Sept. 15, 1943	20th.....	4	Feb. 15, 1944	Oct. 27, 1947
Dec. 11, 1947	21st.....	5	Feb. 24, 1948	Mar. 30, 1951
Apr. 26, 1951	22nd.....	6	Oct. 23, 1951	Apr. 27, 1955
May 25, 1955	23rd.....	4	Feb. 2, 1956	Aug. 3, 1959
Sept. 1, 1959	24th.....	1		

¹ Legislature not yet in session at Oct. 31, 1959.

19.—Twenty-Fourth Ministry of Prince Edward Island, as at Oct. 31, 1959

(Party standing at latest General Election, Sept. 1, 1959: 22 Progressive Conservative and 8 Liberal.)

Office	Name	Date of First Appointment	Date of Present Appointment ¹
Premier, President of the Executive Council and Minister of Agriculture.....	Hon. WALTER R. SHAW.....	Sept. 16, 1959	Sept. 16, 1959
Attorney and Advocate General.....	Hon. R. REGINALD BELL.....	Sept. 16, 1959	Sept. 16, 1959
Minister of Public Works and Minister of Highways.....	Hon. J. PHILIP MATHESON.....	Sept. 16, 1959	Sept. 16, 1959
Minister of Education.....	Hon. L. GEORGE DEWAR.....	Sept. 16, 1959	Sept. 16, 1959
Minister of Industry and Natural Resources and Minister of Fisheries.....	Hon. LEO F. ROSSITER.....	Sept. 16, 1959	Sept. 16, 1959
Minister of Health.....	Hon. HUBERT B. MCNEILL.....	Sept. 16, 1959	Sept. 16, 1959
Provincial Treasurer.....	Hon. MELVIN J. MCQUAID.....	Sept. 16, 1959	Sept. 16, 1959
Provincial Secretary.....	Hon. J. DAVID STEWART.....	Sept. 16, 1959	Sept. 16, 1959
Minister of Welfare and Minister of Labour.....	Hon. HENRY W. WEDGE.....	Sept. 16, 1959	Sept. 16, 1959

¹ Minister not necessarily sworn in on date of appointment.**Subsection 3.—Nova Scotia**

The Government of Nova Scotia consists of a Lieutenant-Governor, an Executive Council and a House of Assembly. The Legislature has 43 members elected for a maximum term of five years. The Legislature elected on Oct. 30, 1956 was the 46th in Nova Scotia's history and the 23rd since Confederation.

The Premier of the province receives a salary of \$12,000 per annum and each Cabinet Minister a salary of \$10,000 per annum. Each member of the House of Assembly receives a sessional indemnity of \$3,200 and an allowance of \$1,600 for expenses incidental to the discharge of his duties. The Leader of the Opposition receives an allowance of \$6,000 in addition to his sessional indemnity.

20.—Lieutenant-Governors of Nova Scotia since Confederation, 1867-1959

Name	Date of Commission	Name	Date of Commission
Lieut.-Gen. the Hon. Sir WILLIAM F. WILLIAMS.....	July 1, 1867	Hon. JAMES D. MCGREGOR.....	Oct. 18, 1910
Maj.-Gen. the Hon. Sir C. HASTINGS DOYLE.....	Oct. 18, 1867	Hon. DAVID MACKEEN.....	Oct. 19, 1915
Lieut.-Gen. the Hon. Sir C. HASTINGS DOYLE.....	Jan. 31, 1868 ¹	Hon. MACCALLUM GRANT.....	Nov. 29, 1916
Hon. JOSEPH HOWE.....	May 1, 1873	Hon. MACCALLUM GRANT.....	Mar. 21, 1922 ¹
Hon. Sir ADAMS G. ARCHIBALD.....	July 4, 1873	Hon. J. ROBSON DOUGLAS.....	Jan. 12, 1925
Hon. MATTHEW HENRY RICHEY.....	July 4, 1883	Hon. JAMES C. TORY.....	Sept. 14, 1925
Hon. A. W. MCLELAN.....	July 9, 1888	Hon. FRANK STANFIELD.....	Nov. 19, 1930
Hon. Sir MALACHY BOWES DALY.....	July 11, 1890	Hon. WALTER H. COVERT.....	Oct. 5, 1931
Hon. Sir MALACHY BOWES DALY.....	July 29, 1895 ¹	Hon. ROBERT IRWIN.....	Apr. 7, 1937
Hon. ALFRED G. JONES.....	July 26, 1900	Hon. FREDERICK F. MATHERS.....	May 31, 1940
Hon. DUNCAN C. FRASER.....	Mar. 27, 1906	Lieut.-Col. the Hon. H. ERNEST KENDALL.....	Nov. 17, 1942
		Hon. J. A. D. MCCURDY.....	Aug. 12, 1947
		Hon. ALISTAIR FRASER.....	Sept. 1, 1952
		Maj.-Gen. the Hon. E. C. PLOW.....	Sept. 1, 1958

¹ Second term.

21.—Premiers of Nova Scotia since Confederation, 1867-1959

Ministry	Name	Date of Formation of Ministry	Ministry	Name	Date of Formation of Ministry
1	Hon. H. BLANCHARD.....	July 4, 1867	10	Hon. E. N. RHODES.....	July 16, 1925
2	Hon. Wm. ANNAND.....	Nov. 7, 1867	11	Col. the Hon. G. S. HARRINGTON.....	Aug. 11, 1930
3	Hon. P. C. HILL.....	May 11, 1875	12	Hon. A. L. MACDONALD....	Sept. 5, 1933
4	Hon. S. H. HOLMES.....	Oct. 22, 1878	13	Hon. A. S. MACMILLAN....	July 10, 1940
5	Hon. J. S. D. THOMPSON...	May 25, 1882	14	Hon. ANGUS L. MACDONALD	Sept. 8, 1945
6	Hon. W. T. PIPES.....	Aug. 3, 1882	15	Hon. HAROLD CONNOLLY...	Apr. 13, 1954
7	Hon. W. S. FIELDING.....	July 28, 1884	16	Hon. HENRY D. HICKS....	Sept. 30, 1954
8	Hon. GEO. H. MURRAY....	July 20, 1896	17	Hon. ROBERT L. STANFIELD.	Nov. 20, 1956
9	Hon. E. H. ARMSTRONG....	Jan. 24, 1923			

22.—Legislatures of Nova Scotia, 1933-59, as at Oct. 31, 1959

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 76, and for 1924-33 in the 1938 edition, p. 111.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
Aug. 22, 1933	17th.....	4	Mar. 1, 1934	May 20, 1937
June 29, 1937	18th.....	4	Mar. 1, 1938	Sept. 19, 1941
Oct. 28, 1941	19th.....	4	Feb. 19, 1942	Sept. 12, 1945
Oct. 23, 1945	20th.....	4	Mar. 14, 1946	Apr. 27, 1949
June 9, 1949	21st.....	4	Mar. 21, 1950	Apr. 14, 1953
May 26, 1953	22nd.....	3	Feb. 24, 1954	Sept. 20, 1956
Oct. 30, 1956	23rd.....	1	Feb. 27, 1957	¹

¹ Life of Legislature not expired at Oct. 31, 1959.

23.—Seventeenth Ministry of Nova Scotia, as at Oct. 31, 1959

(Party standing at latest General Election, Oct. 30, 1956: 24 Progressive Conservative, 18 Liberal and 1 Co-operative Commonwealth Federation.)

Office	Name	Date of First Appointment	Date of Present Appointment ¹
Premier, Provincial Treasurer, and Minister of Education.....	Hon. R. L. STANFIELD.....	Nov. 20, 1956	{Nov. 20, 1956 July 27, 1959
Minister of Highways and Provincial Secretary.....	Hon. G. I. SMITH.....	Nov. 20, 1956	Nov. 20, 1956
Attorney General and Minister of Public Health.....	Hon. R. A. DONAHOE.....	Nov. 20, 1956	Nov. 20, 1956
Minister of Public Works and Minister of Labour.....	Hon. S. T. PYKE.....	Nov. 20, 1956	Nov. 20, 1956
Minister of Agriculture and Marketing and Minister of Lands and Forests.....	Hon. E. D. HALIBURTON.....	Nov. 20, 1956	{Nov. 20, 1956 July 27, 1959
Minister of Mines and Minister of Trade and Industry.....	Hon. E. A. MANSON.....	Nov. 20, 1956	Nov. 20, 1956
Minister of Municipal Affairs.....	Hon. N. L. FERGUSON.....	Nov. 20, 1956	July 27, 1959
Minister of Public Welfare.....	Hon. M. S. LEONARD.....	Aug. 3, 1957	Aug. 3, 1957

¹ Minister not necessarily sworn in on date of appointment.

Subsection 4.—New Brunswick

The Government of New Brunswick has a Lieutenant-Governor, an Executive Council and a House of Assembly. The Legislature elected June 18, 1956 is the 43rd in New Brunswick's history and the 16th since Confederation. It has 52 members who are elected for a statutory term of five years.

The Premier receives \$5,000 per annum in addition to the salary for any other portfolio he may hold. The salary of each Cabinet Minister is \$7,500 and the amount paid as indemnity to each member of the House of Assembly is \$2,400 plus an additional \$1,200 allowance for expenses. The Leader of the Opposition receives an additional \$3,000 and the Speaker receives an allowance of \$1,000 in addition to the regular indemnity.

24.—Lieutenant-Governors of New Brunswick since Confederation, 1867-1959

Name	Date of Commission	Name	Date of Commission
Maj.-Gen. the Hon. Sir C. HASTINGS DOYLE.....	July 1, 1867	Hon. JABEZ B. SNOWBALL.....	Jan. 30, 1902
Col. the Hon. F. P. HARDING.....	Oct. 18, 1867	Hon. L. J. TWEEDIE.....	Mar. 2, 1907
Hon. L. A. WILMOT.....	July 14, 1868	Hon. JOSIAH WOOD.....	Mar. 6, 1912
Hon. SAMUEL LEONARD TILLEY.....	Nov. 5, 1873	Hon. G. W. GANONG.....	June 29, 1916
Hon. E. BARRON CHANDLER.....	July 16, 1878	Hon. WILLIAM PUGSLEY.....	Nov. 6, 1917
Hon. ROBERT DUNCAN WILMOT.....	Feb. 11, 1880	Hon. WILLIAM F. TODD.....	Feb. 24, 1923
Hon. Sir SAMUEL LEONARD TILLEY.....	Oct. 31, 1885	Maj.-Gen. the Hon. HUGH H. McLEAN.....	Dec. 11, 1928
Hon. JOHN BOYD.....	Sept. 21, 1893	Col. the Hon. MURRAY MACLAREN.....	Feb. 5, 1935
Hon. JOHN A. FRASER.....	Dec. 20, 1893	Hon. W. G. CLARK.....	Mar. 5, 1940
Hon. A. R. McCLELAN.....	Dec. 9, 1896	Hon. DAVID LAURENCE MACLAREN.....	Nov. 1, 1945
		Hon. J. LEONARD O'BRIEN.....	June 6, 1958

25.—Premiers of New Brunswick since Confederation, 1867-1959

Ministry	Name	Date of Formation of Ministry	Ministry	Name	Date of Formation of Ministry
1	Hon. A. R. WETMORE.....	1867	12	Hon. JAMES K. FLEMMING..	Oct. 16, 1911
2	Hon. G. E. KING.....	1872	13	Hon. GEORGE J. CLARKE...	Dec. 17, 1914
3	Hon. J. J. FRASER.....	1878	14	Hon. JAMES A. MURRAY...	Feb. 1, 1917
4	Hon. D. L. HANNINGTON...	1882	15	Hon. WALTER E. FOSTER...	Apr. 4, 1917
5	Hon. A. G. BLAIR.....	1883	16	Hon. P. J. VENIOT.....	Jan. 25, 1923
6	Hon. JAMES MITCHELL.....	July 1896	17	Hon. J. B. M. BAXTER.....	Sept. 14, 1925
7	Hon. H. R. EMMERSON.....	October 1897	18	Hon. C. D. RICHARDS.....	May 19, 1931
8	Hon. L. J. TWEEDIE.....	Aug. 31, 1900	19	Hon. L. P. D. TILLEY.....	June 1, 1933
9	Hon. WILLIAM PUGSLEY.....	Mar. 6, 1907	20	Hon. A. A. DYSART.....	July 16, 1935
10	Hon. C. W. ROBINSON.....	May 31, 1907	21	Hon. J. B. McNAIR.....	Mar. 13, 1940
11	Hon. J. D. HAZEN.....	Mar. 24, 1908	22	Hon. H. J. FLEMMING.....	Oct. 8, 1952

26.—Legislatures of New Brunswick, 1935-59, as at Oct. 31, 1959

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 77, and for 1924-35 in the 1938 edition, p. 112.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
June 27, 1935	11th.....	4	Mar. 5, 1936	Oct. 26, 1939
Nov. 20, 1939	12th.....	5	Apr. 4, 1940	July 10, 1944
Aug. 28, 1944	13th.....	4	Feb. 20, 1945	May 18, 1948
June 28, 1948	14th.....	4	Mar. 8, 1949	July 16, 1952
Sept. 22, 1952	15th.....	4	Feb. 12, 1953	Apr. 17, 1956
June 18, 1956	16th.....	1	Feb. 21, 1957	1

¹ Life of Legislature not expired at Oct. 31, 1959.

27.—Twenty-Second Ministry of New Brunswick, as at Oct. 31, 1959

(Party standing at latest General Election, June 18, 1956: 37 Progressive Conservative and 15 Liberal.)

NOTE.—Ministers are shown at date of original appointment as a Minister and at date of appointment to present portfolio, despite the formation of a new Ministry consequent upon the appointment of a new Premier.

Office	Name	Date of First Appointment	Date of Present Appointment ¹
Premier and Minister of Municipal Affairs...	HON. HUGH JOHN FLEMMING....	Oct. 8, 1952	{Oct. 8, 1952 Aug. 1, 1958
Attorney General.....	HON. R. G. L. FAIRWEATHER....	Oct. 17, 1958	Oct. 17, 1958
Provincial Secretary-Treasurer.....	HON. D. D. PATTERSON.....	Oct. 8, 1952	Oct. 8, 1952
Minister of Agriculture.....	HON. C. B. SHEERWOOD.....	Oct. 8, 1952	Oct. 8, 1952
Minister of Health and Social Services.....	HON. J. F. MCINERNEY.....	Oct. 8, 1952	Oct. 8, 1952
Minister of Lands and Mines.....	HON. N. B. BUCHANAN.....	Oct. 8, 1952	Oct. 8, 1952
Minister of Education.....	HON. CLAUDE D. TAYLOR.....	Oct. 8, 1952	Oct. 8, 1952
Minister of Labour.....	HON. ARTHUR E. SNALING.....	Oct. 8, 1952	Oct. 8, 1952
Minister of Industry and Development.....	HON. J. ROGER PICHETTE.....	Oct. 8, 1952	Oct. 8, 1952
Minister without Portfolio and Chairman, New Brunswick Electric Power Commission.....	HON. EDGAR FOURNIER.....	Oct. 8, 1952	Oct. 8, 1952
Minister without Portfolio and President of the Executive Council.....	HON. J. W. BOURGEOIS.....	Apr. 5, 1957	Apr. 5, 1957
Minister of Public Works.....	HON. J. STEWART BROOKS.....	Aug. 1, 1958	Aug. 1, 1958

¹ Minister not necessarily sworn in on date of appointment.

Subsection 5.—Quebec

The Government of Quebec consists of a Lieutenant-Governor, an Executive Council, and a bicameral legislature—the Legislative Council and the Legislative Assembly. The Legislative Council has 24 members nominated for life by the Lieutenant-Governor in Council. The Legislative Assembly has 93 elected members and, like the Legislative Council, has the power to bring forward Bills relating to civil and administrative matters and to the amendment or repeal of existing laws. A Bill to be approved by the Lieutenant-Governor must have received the assent of both Houses. Only the Legislative Assembly can bring forward a Bill requiring the expenditure of public money. The maximum life of a Legislature is five years.

Salaries and allowances of the Premier, members of the Executive Council, Legislative Council and Legislative Assembly are fixed according to RSQ 1941, c. 7 and RSQ 1941, c. 4, as amended by 1952-53, c. 38 and 1957-58, c. 51. All members of Legislative Assembly and Legislative Council receive \$6,000 per annum as salary and \$2,000 by way of allowances; in addition, the Premier receives \$10,000 as salary, \$4,000 allowances and \$2,000 for lodging allowance; Ministers with Portfolio an additional \$8,000 as salary and \$2,000 allowances; Ministers without Portfolio an additional \$5,000 salary and \$2,000 allowances; the Leader of the Opposition in the Legislative Assembly \$6,000 as salary, \$2,000 allowances and \$2,000 for lodging allowance; and the Leader of the Government in the Legislative Council and the Leader of the Opposition in the Legislative Council each receives \$7,000 as salary, \$2,000 allowances and \$3,000 for office allowances.

28.—Lieutenant-Governors of Quebec since Confederation, 1867-1959

Name	Date of Commission	Name	Date of Commission
HON. SIR NARCISSE F. BELLEAU.....	July 1, 1867	HON. SIR PIERRE ÉVARISTE LEBLANC...	Feb. 9, 1915
HON. SIR NARCISSE F. BELLEAU.....	Jan. 31, 1868 ¹	Rt. Hon. Sir CHARLES FITZPATRICK...	Oct. 21, 1918
HON. RENÉ ÉDOUARD CARON.....	Feb. 11, 1873	HON. L. P. BRODEUR.....	Oct. 31, 1923
HON. LUC LETELIER DE ST-JUST.....	Dec. 15, 1876	HON. N. PÉRODEAU.....	Jan. 8, 1924
HON. THÉODORE ROBITAILLE.....	July 26, 1879	HON. SIR LOMER GOUIN.....	Dec. 31, 1928
HON. L. F. R. MASSON.....	Oct. 4, 1884	HON. H. G. CARROLL.....	Apr. 2, 1929
HON. A. R. ANGERS.....	Oct. 24, 1887	HON. E. L. PATENAUDE.....	Apr. 29, 1934
HON. SIR JOSEPH A. CHAPLEAU.....	Dec. 5, 1892	Maj.-Gen. the Hon. Sir EUGÈNE Fiset	Dec. 30, 1939
HON. LOUIS A. JETTÉ.....	Jan. 20, 1898	Maj.-Gen. the Hon. Sir EUGÈNE Fiset.	June 20, 1945 ¹
HON. SIR LOUIS A. JETTÉ.....	Feb. 1, 1903 ¹	HON. GASPARD FAUTEUX.....	Oct. 3, 1950
HON. SIR CHARLES A. P. PELLETIER.....	Sept. 15, 1908	HON. ONÉSIME GAGNON.....	Feb. 14, 1958
HON. SIR FRANÇOIS LANGELIER.....	May 5, 1911		

¹ Second term.

29.—Premiers of Quebec since Confederation, 1867-1959

Ministry	Name	Date of Formation of Ministry	Ministry	Name	Date of Formation of Ministry
1	Hon. P. J. O. CHAUVEAU...	July 15, 1867	11	Hon. L. O. TAILLON.....	Dec. 16, 1892
2	Hon. G. OUMET.....	Feb. 26, 1873	12	Hon. E. J. FLYNN.....	May 12, 1896
3	Hon. C. E. B. DeBOUCHER-VILLE.....	Sept. 22, 1874	13	Hon. F. G. MARCHAND.....	May 26, 1897
4	Hon. H. G. JOLY.....	Mar. 8, 1876	14	Hon. S. N. PARENT.....	Oct. 3, 1900
5	Hon. J. A. CHAPLEAU.....	Oct. 30, 1879	15	Hon. Sir L. GOUIN.....	Mar. 23, 1905
6	Hon. J. A. MOUSSEAU.....	July 31, 1882	16	Hon. LOUIS ALEXANDRE TASCHEREAU.....	July 8, 1920
7	Hon. J. J. ROSS.....	Jan. 23, 1884	17	Hon. A. GODBOUT.....	June 11, 1936
8	Hon. L. O. TAILLON.....	Jan. 25, 1887	18	Hon. M. DUPLESSIS.....	Aug. 24, 1936
9	Hon. H. MERCIER.....	Jan. 27, 1887	19	Hon. A. GODBOUT.....	Nov. 10, 1939
10	Hon. C. E. B. DeBOUCHER-VILLE.....	Dec. 21, 1891	20	Hon. M. DUPLESSIS.....	Aug. 30, 1944
			21	Hon. J.-P. SAUVÉ.....	Sept. 11, 1959

30.—Legislatures of Quebec, 1935-59, as at Oct. 31, 1959

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 78, and for 1924-35 in the 1938 edition, p. 113.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution *
Nov. 25, 1935	19th.....	1	Mar. 24, 1936	June 11, 1936
Aug. 17, 1936	20th.....	4	Oct. 7, 1936	Sept. 23, 1939
Oct. 25, 1939	21st.....	5	Feb. 20, 1940	June 29, 1944
Aug. 8, 1944	22nd.....	4	Feb. 7, 1945	June 9, 1948
July 28, 1948	23rd.....	4	Jan. 19, 1949	May 28, 1952
July 16, 1952	24th.....	4	Nov. 12, 1952	Apr. 25, 1956
June 20, 1956	25th.....	1	Nov. 14, 1956	1

* Life of Legislature not expired at Oct. 31, 1959.

31.—Twenty-First Ministry of Quebec, as at Oct. 31, 1959

(Party standing at latest General Election, June 20, 1956: 72 Union Nationale, 20 Liberal and 1 Independent.)

NOTE.—Ministers are shown at date of original appointment as a Minister and at date of appointment to present portfolio, despite the formation of a new Ministry consequent upon the appointment of a new Premier.

Office	Name	Date of First Appointment	Date of Present Appointment ¹
Premier, President of the Executive Council and Minister of Social Welfare and Youth	Hon. JEAN-PAUL SAUVÉ.....	Sept. 18, 1946	Sept. 11, 1959 (Sept. 18, 1946)
Minister of Finance.....	Hon. JOHN S. BOURQUE.....	Aug. 24, 1936	Apr. 30, 1958
Minister of Lands and Forests.....	Hon. JEAN J. BERTRAND.....	Apr. 30, 1958	Apr. 30, 1958
Minister of Hydraulic Resources.....	Hon. DANIEL JOHNSON.....	Apr. 30, 1958	Apr. 30, 1958
Minister of Colonization.....	Hon. J. D. BÉGIN.....	Aug. 30, 1944	Aug. 30, 1944
Minister without Portfolio.....	Hon. ANTONIO ÉLIE.....	Aug. 24, 1936	Aug. 30, 1944
Minister of Agriculture.....	Hon. LAURENT BARRÉ.....	Aug. 30, 1944	Aug. 30, 1944
Minister of Roads.....	Hon. ANTONIO TALBOT.....	Aug. 30, 1944	Aug. 30, 1944
Minister of Labour.....	Hon. ANTONIO BARRETTE.....	Aug. 30, 1944	Aug. 30, 1944
Minister of Game and Fisheries.....	Hon. CAMILLE POULIOT.....	Aug. 30, 1944	Aug. 30, 1944
Minister of Public Works.....	Hon. ROMÉO LORRAIN.....	Aug. 30, 1944	Aug. 30, 1944
Minister of Trade and Commerce.....	Hon. PAUL BEAULIEU.....	Aug. 30, 1944	Aug. 30, 1944
Provincial Secretary.....	Hon. YVES PRÉVOST.....	Sept. 26, 1956	Sept. 26, 1956
Attorney General and Minister of Transportation and Communications.....	Hon. ANTOINE RIVARD.....	Dec. 15, 1948	Sept. 11, 1959 (Apr. 12, 1950)
Minister of Municipal Affairs.....	Hon. PAUL DOZOIS.....	Sept. 26, 1956	Sept. 26, 1956
Minister of Mines.....	Hon. W. M. COTTINGHAM.....	June 2, 1954	June 2, 1954
Solicitor General.....	Hon. JACQUES MIQUELON.....	July 23, 1952	Nov. 4, 1959
Minister of Health.....	Hon. ARTHUR LECLERC.....	July 23, 1952	Sept. 11, 1959
Minister without Portfolio.....	Hon. WILFRID LABBÉ.....	July 23, 1952	July 23, 1952
Minister without Portfolio.....	Hon. MAURICE BELEMARE.....	Sept. 11, 1959	Sept. 11, 1959

¹ Minister not necessarily sworn in on date of appointment.

32.—Members of the Legislative Council of Quebec, as at Oct. 31, 1959

(According to seniority)

Name	Division ¹	Date of Appointment
R. O. GROTHÉ.....	De Salaberry.....	Dec. 23, 1927
VICTOR MARCHAND.....	Rigaud.....	Apr. 15, 1932
HECTOR LAFERTÉ.....	Stadacona.....	July 23, 1934
J. L. BARIBEAU (Speaker).....	Shawinigan.....	Jan. 14, 1938
PHILIPPE BRAIS.....	Grandville.....	Feb. 16, 1940
JULES BRILLANT.....	Golfe.....	Jan. 14, 1942
FRANK L. CONNORS.....	Mille Isles.....	Jan. 14, 1942
ROBERT R. NESS.....	Inkerman.....	Jan. 14, 1942
FÉLIX MESSIER.....	De Lanaudière.....	Feb. 12, 1942
ÉDOUARD ASSELIN.....	Wellington.....	Jan. 23, 1946
GEO. B. FOSTER.....	Victoria.....	Aug. 22, 1946
J. OLIER RENAUD.....	Alma.....	Aug. 22, 1946
PATRICE TARDIF.....	De la Vallière.....	July 20, 1952
JOSEPH BOULLANGER.....	De la Durantaye.....	Oct. 8, 1952
ÉDOUARD MASSON.....	Repentigny.....	Mar. 12, 1953
ALBERT BOUCHARD.....	La Salle.....	Nov. 24, 1954
JEAN BARRETTE.....	Sorel.....	Oct. 19, 1955
ÉMILE LESAGE.....	Montarville.....	Aug. 1, 1956
ALBINY PAQUETTE.....	Rougemont.....	Oct. 29, 1958
JOHN P. ROWATT.....	De Lorimier.....	Oct. 29, 1958
ERNEST BENOIT.....	Kennebec.....	Apr. 8, 1959
GÉRALD MARTINEAU.....	Lauzon.....	Sept. 30, 1959
ANTONIO AUGER.....	Les Laurentides.....	Sept. 30, 1959

¹ The Division of Bedford was unrepresented at Oct. 31, 1959.

Subsection 6.—Ontario

The Government of Ontario consists of a Lieutenant-Governor, an Executive Council and a House of Assembly. The House of Assembly, the single-chamber Legislature of the province, is composed of 98 members elected for a statutory term of five years.

Besides the regular departments of government, the Niagara Parks Commission, the Ontario Municipal Board, The Hydro-Electric Power Commission of Ontario, the Ontario-St. Lawrence Development Commission, the Ontario Northland Transportation Commission, the Liquor Control Board, the Liquor Licence Board, the Hospital Services Commission and The Water Resources Commission have been created.

Under the provisions of the Legislative Assembly Act (RSO 1950, c. 202, and amendments) each member of the Assembly is paid an annual indemnity of \$3,600 and an allowance of \$1,800 for expenses. In addition, the Speaker receives a special indemnity at the annual rate of \$3,000 and an expense allowance of \$2,000; the Chairman of the Committee of the Whole a special indemnity at the annual rate of \$1,000; and the Leader of the Opposition a special indemnity of \$3,000 and an annual allowance of \$2,000 for expenses. Each member of the Cabinet having charge of a department receives the ordinary indemnity as a member of the Legislature in addition to his salary as a Minister of the Crown. The salary provided in the Executive Council Act for the Premier is

\$14,000 and for a Cabinet Minister having charge of a department \$10,000. By the 1956 amendment, every Minister of the Crown in charge of a department, the Minister of the Crown who is a member of The Hydro-Electric Power Commission of Ontario, and the Leader of the Opposition receives a representation allowance of \$2,000 per annum. Each Minister without Portfolio, other than the Minister who is a member of The Hydro-Electric Power Commission, receives \$1,800 salary and \$900 representation allowance per annum, by amendments in 1959 to the Executive Council Act and the Legislative Assembly Act, respectively.

33.—Lieutenant-Governors of Ontario since Confederation, 1867-1959

Name	Date of Commission	Name	Date of Commission
Maj.-Gen. the Hon. H. W. STISED.....	July 1, 1867	Lieut.-Col. the Hon. Sir JOHN S. HENDRIE.....	Sept. 26, 1914
Hon. W. P. HOWLAND.....	July 14, 1868	Hon. LIONEL H. CLARKE.....	Nov. 27, 1919
Hon. JOHN W. CRAWFORD.....	Nov. 5, 1873	Col. the Hon. HENRY COCKSHUTT.....	Sept. 10, 1921
Hon. D. A. MACDONALD.....	May 18, 1875	Hon. WILLIAM DONALD ROSS.....	Dec. 20, 1926
Hon. JOHN BEVERLY ROBINSON.....	June 30, 1880	Col. the Hon. HERBERT ALEXANDER BRUCE.....	Oct. 25, 1932
Hon. Sir ALEXANDER CAMPBELL.....	Feb. 8, 1887	Hon. ALBERT MATTHEWS.....	Nov. 23, 1937
Hon. Sir GEORGE A. KIRKPATRICK.....	May 28, 1892	Hon. RAY LAWSON.....	Dec. 26, 1940*
Hon. Sir OLIVER MOWAT.....	Nov. 18, 1897	Hon. LOUIS O. BREITHAUPF.....	Jan. 24, 1952
Hon. Sir WILLIAM MORTIMER CLARK.....	Apr. 20, 1903	Hon. Justice JOHN KELLER MACKAY.....	Dec. 30, 1957
Hon. Sir JOHN M. GIBSON.....	Sept. 22, 1908		

34.—Premiers of Ontario since Confederation, 1867-1959

Ministry	Name	Date of Formation of Ministry	Ministry	Name	Date of Formation of Ministry
1	Hon. J. S. MACDONALD.....	July 16, 1867	9	Hon. GEORGE HOWARD FERGUSON.....	July 16, 1923
2	Hon. E. BLAKE.....	Dec. 30, 1871	10	Hon. G. S. HENRY.....	Dec. 15, 1930
3	Hon. O. MOWAT.....	Oct. 25, 1872	11	Hon. M. F. HEPBURN.....	July 10, 1934
4	Hon. A. S. HARDY.....	July 25, 1896	12	Hon. G. D. CONANT.....	Oct. 21, 1942
5	Hon. G. W. ROSS.....	Oct. 21, 1899	13	Hon. H. C. NIXON.....	May 18, 1943
6	Hon. Sir J. P. WHITNEY.....	Feb. 8, 1905	14	Hon. GEORGE A. DREW.....	Aug. 17, 1943
7	Hon. Sir WILLIAM HOWARD HEARST.....	Oct. 2, 1914	15	Hon. THOMAS L. KENNEDY.....	Oct. 10, 1948
8	Hon. ERNEST CHARLES DRURY.....	Nov. 14, 1919	16	Hon. LESLIE M. FROST.....	May 4, 1949

35.—Legislatures of Ontario, 1934-59, as at Oct. 31, 1959

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 79, and for 1924-34 in the 1938 edition, p. 114.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
June 19, 1934	19th.....	3	Feb. 20, 1935	Apr. 9, 1936
Oct. 6, 1937	20th.....	8	Dec. 1, 1937	June 30, 1943
Aug. 4, 1943	21st.....	2	Feb. 22, 1944	Mar. 24, 1945
June 4, 1945	22nd.....	4	July 16, 1945	Apr. 27, 1948
June 7, 1948	23rd.....	4	Feb. 10, 1949	Oct. 6, 1951
Nov. 22, 1951	24th.....	4	Feb. 21, 1952	May 2, 1955
June 9, 1955	25th.....	5	Sept. 8, 1955	May 4, 1959
June 11, 1959	26th.....	1		

* Legislature not yet in session at Oct. 31, 1959.

36.—Sixteenth Ministry of Ontario, as at Oct. 31, 1959

(Party standing at latest General Election, June 11, 1959: 71 Progressive Conservative, 22 Liberal and 5 Co-operative Commonwealth Federation.)

NOTE.—Ministers are shown at date of original appointment as a Minister and at date of appointment to present portfolio, despite the formation of a new Ministry consequent upon the appointment of a new Premier.

Office	Name	Date of First Appointment	Date of Present Appointment ¹
Premier and President of the Council.....	Hon. LESLIE M. FROST.....	Aug. 17, 1943	May 4, 1949
Minister of Labour.....	Hon. CHARLES DALEY.....	Aug. 17, 1943	Aug. 17, 1943
Minister of Agriculture.....	Hon. WILLIAM A. GOODFELLOW.....	Jan. 7, 1946	Aug. 1, 1956
Minister of Public Welfare.....	Hon. LOUIS P. CECILE.....	Sept. 17, 1948	Aug. 17, 1955
Provincial Secretary.....	Hon. MACKINNON PHILLIPS.....	Aug. 8, 1950	Dec. 22, 1958
Minister of Education.....	Hon. WILLIAM J. DUNLOP.....	Oct. 2, 1951	Oct. 2, 1951
Minister of Municipal Affairs.....	Hon. WILLIAM K. WARRENDER.....	Jan. 20, 1953	Nov. 1, 1956
Treasurer.....	Hon. JAMES N. ALLAN.....	Jan. 5, 1955	Apr. 28, 1958
Minister of Planning and Development.....	Hon. WILLIAM M. NICKLE.....	Jan. 20, 1955	Aug. 17, 1955
Attorney General.....	Hon. A. KELSO ROBERTS.....	Aug. 17, 1955	Aug. 17, 1955
Minister of Travel and Publicity.....	Hon. BRYAN L. CATHCART.....	Aug. 17, 1955	Aug. 17, 1955
Minister of Public Works.....	Hon. RAY CONNELL.....	Nov. 1, 1956	Dec. 22, 1958
Minister of Health.....	Hon. MATTHEW B. DYMOND.....	July 18, 1957	Dec. 22, 1958
Minister of Lands and Forests.....	Hon. J. W. SPOONER.....	July 18, 1957	July 23, 1958
Minister of Highways.....	Hon. FREDERICK M. CASS.....	Apr. 28, 1958	Apr. 28, 1958
Minister of Transport.....	Hon. JOHN YAREMKO.....	Apr. 28, 1958	Dec. 22, 1958
Minister of Energy Resources and 2nd Vice-Chairman, Hydro-Electric Power Commission.....	Hon. ROBERT MACAULAY.....	May 26, 1958	May 5, 1959
Minister of Mines.....	Hon. JAMES A. MALONEY.....	Dec. 22, 1958	Dec. 22, 1958
Minister of Reform Institutions.....	Hon. GEORGE C. WARDROPE.....	Dec. 22, 1958	Dec. 22, 1958
Minister without Portfolio.....	Hon. JOHN P. ROBERTS.....	Dec. 22, 1958	Dec. 22, 1958
Minister without Portfolio.....	Hon. JOHN ROOT.....	Dec. 22, 1958	Dec. 22, 1958

¹ Minister not necessarily sworn in on date of appointment.

Subsection 7.—Manitoba

Besides a Lieutenant-Governor, Manitoba has an Executive Council at present composed of nine members and a Legislative Assembly of 57 members elected for a statutory term of five years.

The Premier of the province is paid a salary of \$10,000 per annum and each of the other members of the Cabinet \$8,000. Members of the Legislature are each paid an indemnity of \$2,000 and an expense allowance of \$1,000. The Leader of the Opposition is paid an additional amount of \$2,500 and the Speaker of the Legislature receives an amount double the indemnity and expense allowance of an individual member.

37.—Lieutenant-Governors of Manitoba since Confederation, 1870-1959

Name	Date of Commission	Name	Date of Commission
Hon. A. G. ARCHIBALD.....	May 20, 1870	Hon. Sir DOUGLAS C. CAMERON.....	Aug. 1, 1911
Hon. FRANCIS GOODSCHALL JOHNSON..	Apr. 9, 1872	Hon. Sir JAMES A. M. ATKINS.....	Aug. 3, 1916
Hon. ALEXANDER MORRIS.....	Dec. 2, 1872	Hon. Sir JAMES A. M. ATKINS.....	Oct. 17, 1921 ¹
Hon. JOSEPH E. CAUCHON.....	Oct. 8, 1877	Hon. THEODORE A. BURROWS.....	Oct. 9, 1926
Hon. JAMES C. ATKINS.....	Sept. 29, 1882	Hon. J. D. MCGREGOR.....	Jan. 25, 1929
Hon. J. C. SCHULTZ.....	July 1, 1888	Hon. WILLIAM JOHNSTON TUPPER.....	Dec. 1, 1934
Hon. J. C. PATTERSON.....	Sept. 2, 1895	Hon. ROLAND FAIRBAIRN McWILLIAMS.	Nov. 1, 1940
Hon. Sir DANIEL H. McMILLAN.....	Oct. 10, 1900	Hon. JOHN STEWART McDIARMID.....	Aug. 1, 1953
Hon. Sir DANIEL H. McMILLAN.....	May 11, 1906 ¹		

¹ Second term.

38.—Premiers of Manitoba since Confederation, 1870-1959

Ministry	Name	Date of Formation of Ministry	Ministry	Name	Date of Formation of Ministry
1	Hon. A. BOYD.....	Sept. 16, 1870	9	Hon. H. J. MACDONALD....	Jan. 8, 1900
2	Hon. N. A. GIRARD.....	Dec. 14, 1871	10	Hon. Sir R. P. ROBLIN....	Oct. 29, 1903
3	Hon. H. J. H. CLARKE....	Mar. 14, 1872	11	Hon. T. C. NORRIS.....	May 12, 1915
4	Hon. N. A. GIRARD.....	July 8, 1874	12	Hon. JOHN BRACKEN.....	Aug. 8, 1922
5	Hon. R. A. DAVIS.....	Dec. 3, 1874	13	Hon. STUART S. GARSON...	Jan. 14, 1943
6	Hon. JOHN NORQUAY.....	Oct. 16, 1878	14	Hon. D. L. CAMPBELL....	Nov. 13, 1948
7	Hon. D. H. HARRISON....	Dec. 26, 1887	15	Hon. DUFFERIN ROBLIN....	June 30, 1958
8	Hon. T. GREENWAY.....	Jan. 19, 1888			

39.—Legislatures of Manitoba, 1936-59, as at Oct. 31, 1959

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 80, and for 1924-36 in the 1938 edition, p. 115.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of * Dissolution
July 27, 1936	20th.....	5	Feb. 18, 1937	Mar. 13, 1941
Apr. 22, 1941	21st.....	5	Dec. 9, 1941	Sept. 8, 1945
Oct. 15, 1945	22nd.....	4	Feb. 19, 1946	Sept. 29, 1949
Nov. 10, 1949	23rd.....	7	Feb. 14, 1950	Apr. 23, 1953
June 8, 1953	24th.....	5	Feb. 2, 1954	Apr. 30, 1958
June 16, 1958	25th.....	2	Oct. 23, 1958	Mar. 31, 1959
May 14, 1959	26th.....	1	June 9, 1959	1

¹ Life of Legislature not expired at Oct. 31, 1959.

40.—Fifteenth Ministry of Manitoba, as at Oct. 31, 1959

(Party standing at latest General Election, May 14, 1959: 36 Progressive Conservative, 11 Liberal and 10 Co-operative Commonwealth Federation.)

NOTE.—Ministers are shown at date of original appointment as a Minister and at date of appointment to present portfolio, despite the formation of a new Ministry consequent upon the appointment of a new Premier.

Office	Name	Date of First Appointment	Date of Present Appointment ¹
Premier and Acting Provincial Treasurer....	Hon. DUFFERIN ROBLIN.....	June 30, 1958	June 30, 1958
Minister of Public Works.....	Hon. ERRICK WILLIS.....	Nov. 2, 1940	Aug. 7, 1959
Minister of Industry and Commerce.....	Hon. GURNEY EVANS.....	June 30, 1958	Aug. 7, 1959
Minister of Education.....	Hon. STEWART E. McLEAN.....	June 30, 1958	June 30, 1958
Attorney General.....	Hon. STERLING LYON.....	June 30, 1958	June 30, 1958
Minister of Labour and Acting Minister of Municipal Affairs.....	Hon. JOHN THOMPSON.....	June 30, 1958	June 30, 1958
Minister of Public Utilities and Acting Provincial Secretary.....	Hon. JOHN CARROLL.....	June 30, 1958	June 30, 1958
Minister of Agriculture and Conservation....	Hon. GEORGE HUTTON.....	Aug. 7, 1959	Aug. 7, 1959
Minister of Mines and Resources.....	Hon. CHARLES H. WITNEY.....	Aug. 7, 1959	Aug. 7, 1959

¹ Minister not necessarily sworn in on date of appointment.

Subsection 8.—Saskatchewan

The Government of Saskatchewan consists of a Lieutenant-Governor, an Executive Council and a Legislative Assembly. The statutory number of members of the Legislative Assembly is 53 (55 as of next General Election), elected for a maximum term of five years.

The Premier receives \$9,500 and each Cabinet Minister \$8,000 annually in addition to a sessional indemnity. The Leader of the Opposition receives \$5,000, the Speaker \$2,500 and the Deputy Speaker \$1,500. The sessional indemnity of a member of the Legislature is \$3,200 together with an expense allowance of \$1,600. Members for the three northernmost constituencies of Cumberland, Athabasca and Meadow Lake each receive a \$3,500 sessional indemnity and a \$1,750 expense allowance.

41. —Lieutenant-Governors of Saskatchewan since Confederation, 1905-59

Name	Date of Commission	Name	Date of Commission
Hon. A. E. FORGET.....	Aug. 24, 1905	Hon. A. P. McNAB.....	Sept. 10, 1936
Hon. GEORGE W. BROWN.....	Oct. 5, 1910	Hon. THOMAS MILLER.....	Feb. 27, 1945
Hon. Sir RICHARD STUART LAKE.....	Oct. 6, 1915	Hon. REGINALD J. M. PARKER.....	June 22, 1945
Hon. H. W. NEWLANDS.....	Feb. 17, 1921	Hon. J. M. UHRICH.....	Mar. 24, 1948
Hon. H. W. NEWLANDS.....	Feb. 22, 1926 ¹	Hon. W. J. PATTERSON.....	July 4, 1951
Lieut.-Col. the Hon. H. E. MUNROE...	Mar. 31, 1931	Hon. F. L. BASTEDO.....	Sept. 1, 1958

¹ Second term.

42.—Premiers of Saskatchewan since Confederation, 1905-59

Ministry	Name	Date of Formation of Ministry	Ministry	Name	Date of Formation of Ministry
1	Hon. WALTER SCOTT.....	Sept. 12, 1905	5	Hon. J. T. M. ANDERSON..	Sept. 9, 1929
2	Hon. W. M. MARTIN.....	Oct. 20, 1916	6	Hon. J. G. GARDINER.....	July 19, 1934
3	Hon. C. A. DUNNING.....	Apr. 5, 1922	7	Hon. W. J. PATTERSON.....	Nov. 1, 1935
4	Hon. J. G. GARDINER.....	Feb. 26, 1926	8	Hon. T. C. DOUGLAS.....	July 10, 1944

43.—Legislatures of Saskatchewan, 1934-59, as at Oct. 31, 1959

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 81, and for 1924-34 in the 1938 edition, p. 116.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
June 19, 1934	8th.....	4	Nov. 15, 1934	May 14, 1938
June 8, 1938	9th.....	6	Jan. 19, 1939	May 10, 1944
June 15, 1944	10th.....	5	Oct. 19, 1944	May 19, 1948
June 24, 1948	11th.....	5	Feb. 10, 1949	May 7, 1952
June 11, 1952	12th.....	4	Feb. 12, 1953	Apr. 25, 1956
June 20, 1956	13th.....	1	Feb. 14, 1957	¹

¹ Life of Legislature not expired at Oct. 31, 1959.

44.—Eighth Ministry of Saskatchewan, as at Oct. 31, 1959

(Party standing at latest General Election, June 20, 1956: 36 Co-operative Commonwealth Federation, 14 Liberal and 3 Social Credit.)

NOTE.—Ministers are shown at date of original appointment as a Minister and at date of appointment to present portfolio, despite the formation of a new Ministry consequent upon the appointment of a new Premier.

Office	Name	Date of First Appointment	Date of Present Appointment ¹
Premier, President of the Council and Minister of Co-operation and Co-operative Development.....	Hon. T. C. DOUGLAS.....	July 10, 1944	(July 10, 1944 Nov. 14, 1949)
Provincial Treasurer.....	Hon. C. M. FINES.....	July 10, 1944	July 10, 1944
Minister of Mineral Resources.....	Hon. J. H. BROCKELBANK.....	July 10, 1944	Apr. 1, 1953
Minister of Highways and Transportation..	Hon. J. T. DOUGLAS.....	July 10, 1944	July 10, 1944
Minister of Education.....	Hon. W. S. LLOYD.....	July 10, 1944	July 10, 1944
Minister of Municipal Affairs.....	Hon. L. F. McINTOSH.....	July 10, 1944	Aug. 4, 1948
Minister of Labour and Minister of Telephones.....	Hon. C. C. WILLIAMS.....	July 10, 1944	(July 10, 1944 July 27, 1956)
Minister of Agriculture.....	Hon. I. C. NOLLET.....	Feb. 26, 1945	Feb. 26, 1945
Minister of Social Welfare and Rehabilitation	Hon. T. J. BENTLEY.....	Nov. 14, 1949	July 27, 1956
Minister of Natural Resources.....	Hon. A. G. KUZIAK.....	Oct. 24, 1952	July 27, 1956
Attorney General and Provincial Secretary..	Hon. R. A. WALKER.....	July 27, 1956	(July 27, 1956 Aug. 30, 1957)
Minister of Travel and Information.....	Hon. R. BROWN.....	July 27, 1956	(July 27, 1956 Apr. 1, 1957)
Minister of Public Health.....	Hon. J. W. ERB.....	July 27, 1956	July 27, 1956
Minister of Public Works.....	Hon. C. G. WILLIS.....	Aug. 31, 1956	Aug. 31, 1956
Minister without Portfolio.....	Hon. J. H. STURDY.....	July 10, 1944	July 27, 1956

¹ Minister not necessarily sworn in on date of appointment.

Subsection 9.—Alberta

The Government of the Province of Alberta is composed of a Lieutenant-Governor, an Executive Council and a Legislative Assembly. There are 65 members in the Legislative Assembly, elected for a maximum period of five years.

The salary of the Premier is \$13,000 and of a Cabinet Minister \$10,000. Special allowances are paid as follows: the Speaker \$2,500; the Deputy Speaker \$1,500; and the Leader of the Opposition \$2,500. The sessional indemnity for each member of the Legislative Assembly is \$2,400, plus an expense allowance of \$1,200, plus a subsistence allowance (for members residing outside Edmonton) of \$15 for each day during the session that a member is necessarily absent from his permanent place of residence.

45.—Lieutenant-Governors of Alberta since Confederation, 1905-59

Name	Date of Commission	Name	Date of Commission
Hon. GEORGE H. V. BULYEA.....	Aug. 24, 1905	Hon. WILLIAM L. WALSH.....	Apr. 24, 1931
Hon. GEORGE H. V. BULYEA.....	Oct. 5, 1910 ¹	Hon. PHILIP C. H. PRIMROSE.....	Sept. 10, 1936
Hon. ROBERT GEORGE BRETT.....	Oct. 6, 1915	Hon. J. C. BOWEN.....	Mar. 20, 1937
Hon. ROBERT GEORGE BRETT.....	Oct. 20, 1920 ¹	Hon. JOHN J. BOWLEN.....	Feb. 1, 1950
Hon. WILLIAM EGBERT.....	Oct. 20, 1925		

¹ Second term.

46.—Premiers of Alberta since Confederation, 1905-59

Ministry	Name	Date of Formation of Ministry	Ministry	Name	Date of Formation of Ministry
1	Hon. ALEX. RUTHERFORD...	Sept. 8, 1905	5	Hon. J. E. BROWNLEE.....	Nov. 23, 1925
2	Hon. A. L. SIFTON.....	May 26, 1910	6	Hon. R. G. REID.....	July 10, 1934
3	Hon. CHARLES STEWART...	Oct. 13, 1917	7	Hon. WM. ABERHART.....	Sept. 13, 1935
4	Hon. HERBERT GREENFIELD	Aug. 13, 1921	8	Hon. ERNEST C. MANNING.	May 31, 1943

47.—Legislatures of Alberta, 1935-59, as at Oct. 31, 1959

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 82, and for 1924-34 in the 1938 edition, p. 117.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
Aug. 22, 1935	8th.....	9	Feb. 6, 1936	Feb. 16, 1940
Mar. 21, 1940	9th.....	4	Feb. 20, 1941	July 7, 1944
Aug. 8, 1944	10th.....	5	Feb. 22, 1945	July 16, 1948
Aug. 17, 1948	11th.....	5	Feb. 17, 1949	June 28, 1952
Aug. 5, 1952	12th.....	3	Feb. 19, 1953	May 12, 1955
June 29, 1955	13th.....	5	Aug. 17, 1955	May 9, 1959
June 18, 1959	14th.....	1	1	1

¹ Legislature not yet in session at Oct. 31, 1959.

48.—Eighth Ministry of Alberta, as at Oct. 31, 1959

(Party standing at latest General Election, June 18, 1959: 61 Social Credit, 1 Liberal, 1 Progressive Conservative, 1 Coalition and 1 Independent Social Credit.)

NOTE.—Ministers are shown at date of original appointment as a Minister and at date of appointment to present portfolio, despite the formation of a new Ministry consequent upon the appointment of a new Premier.

Office	Name	Date of First Appointment	Date of Present Appointment ¹
Premier, President of Council, Minister of Mines and Minerals, and Attorney General	Hon. ERNEST C. MANNING.....	Sept. 3, 1935	(May 31, 1943 Sept. 16, 1952 Aug. 2, 1955)
Minister of Municipal Affairs.....	Hon. ALFRED J. HOOKE.....	Apr. 20, 1945	Aug. 2, 1955
Minister of Highways.....	Hon. GORDON E. TAYLOR.....	Dec. 27, 1950	May 1, 1951
Minister of Education.....	Hon. ANDERS O. AALBORG.....	Sept. 9, 1952	Sept. 9, 1952
Minister of Agriculture.....	Hon. LEONARD C. HALMRAST.....	Jan. 3, 1953	Jan. 5, 1954
Minister of Lands and Forests.....	Hon. NORMAN A. WILLMORE.....	Nov. 10, 1953	Aug. 2, 1955
Minister of Public Welfare.....	Hon. ROBIN D. JORGENSEN.....	Jan. 5, 1954	Jan. 5, 1954
Provincial Treasurer.....	Hon. EDGAR W. HINMAN.....	Dec. 23, 1954	Aug. 2, 1955
Minister of Public Works.....	Hon. JAMES HARTLEY.....	Aug. 2, 1955	Aug. 2, 1955
Minister without Portfolio.....	Hon. FRED. C. COLBORNE.....	Aug. 2, 1955	Aug. 2, 1955
Minister of Industry and Development and Provincial Secretary.....	Hon. A. RUSSELL PATRICK.....	Aug. 2, 1955	Sept. 1, 1959
Minister of Labour and Minister of Telephones	Hon. RAYMOND REIERSON.....	Aug. 2, 1955	Sept. 22, 1959
Minister of Health.....	Hon. Dr. J. DONOVAN ROSS.....	Sept. 18, 1957	Sept. 18, 1957

¹ Minister not necessarily sworn in on date of appointment.

Subsection 10.—British Columbia

The Government of British Columbia has a Lieutenant-Governor, an Executive Council and a Legislative Assembly. The Legislative Assembly, elected for a statutory term of five years, has 52 members.

Each member of the Executive Council and the Legislative Assembly receives a sessional allowance of \$3,400 and \$1,000 for expenses. There is also paid to each member a living allowance of \$15 for each day's attendance at the session and for each Saturday, Sunday or holiday that intervenes between two sittings of the House; the allowance of \$15 in any session is not paid in respect of more than 40 days. Each member also receives an allowance of 25 cents per mile of the distance between his place of residence and the city of Victoria, reckoning such distance, going and coming, according to the nearest mail route. In addition, the Premier receives a salary of \$15,000 and each member of the Executive Council \$12,500. The Leader of the Opposition has a special allowance of \$3,500 for expenses, the Speaker receives a special allowance of \$3,500 and the Deputy Speaker an allowance of \$1,000.

49.—Lieutenant-Governors of British Columbia since Confederation, 1871-1959

Name	Date of Commission	Name	Date of Commission
Hon. J. W. TRUTCH.....	July 5, 1871	Col. the Hon. EDWARD G. PRIOR....	Dec. 9, 1919
Hon. ALBERT NORTON RICHARDS.....	June 27, 1876	Hon. WALTER C. NICHOL.....	Dec. 24, 1920
Hon. CLEMENT F. CORNWALL.....	June 21, 1881	Hon. R. RANDOLPH BRUCE.....	Jan. 21, 1926
Hon. HUGH NELSON.....	Feb. 8, 1887	Hon. J. W. FORDHAM JOHNSON.....	July 18, 1931
Hon. EDGAR DEWDNEY.....	Nov. 1, 1892	Hon. ERIC W. HAMBER.....	Apr. 29, 1936
Hon. THOMAS R. MCINNES.....	Nov. 18, 1897	Lieut.-Col. the Hon. WILLIAM C. WOODWARD.....	Aug. 29, 1941
Hon. Sir HENRI G. JOLY DE LOTBINIÈRE.....	June 21, 1900	Col. the Hon. CHARLES ARTHUR BANKS.....	Oct. 1, 1946
Hon. JAMES DUNSMUIR.....	May 11, 1906	Hon. CLARENCE WALLACE.....	Oct. 1, 1950
Hon. T. W. PATERSON.....	Dec. 3, 1909	Hon. FRANK MACKENZIE ROSS.....	Oct. 3, 1955
Hon. Sir FRANK S. BARNARD.....	Dec. 5, 1914		

50.—Premiers of British Columbia since Confederation, 1871-1959

Ministry	Name	Date of Formation of Ministry	Ministry	Name	Date of Formation of Ministry
1	Hon. J. F. MCCREIGHT.....	December 1871	14	Hon. J. DUNSMUIR.....	June 15, 1900
2	Hon. A. DE COSMOS.....	Dec. 23, 1872	15	Hon. E. G. PRIOR.....	Nov. 21, 1902
3	Hon. G. A. WALKEM.....	Feb. 11, 1874	16	Hon. R. McBRIDE.....	June 1, 1903
4	Hon. A. C. ELLIOT.....	Feb. 1, 1876	17	Hon. WM. J. BOWSER.....	Dec. 15, 1915
5	Hon. G. A. WALKEM.....	June 26, 1878	18	Hon. HARLAN CAREY BROWSTER.....	Nov. 19, 1916
6	Hon. K. BEAVEN.....	June 13, 1882	19	Hon. JOHN OLIVER.....	Mar. 6, 1918
7	Hon. W. SMYTHE.....	Jan. 28, 1883	20	Hon. J. D. MACLEAN.....	Aug. 20, 1927
8	Hon. A. E. B. DAVIE.....	Apr. 1, 1887	21	Hon. S. F. TOLMIE.....	Aug. 21, 1928
9	Hon. J. ROBSON.....	Aug. 3, 1889	22	Hon. T. D. PATTULLO.....	Nov. 15, 1933
10	Hon. T. DAVIE.....	July 2, 1892	23	Hon. JOHN HART.....	Dec. 9, 1941
11	Hon. J. H. TURNER.....	Mar. 4, 1895	24	Hon. B. I. JOHNSON.....	Dec. 29, 1947
12	Hon. C. A. SEMLIN.....	Aug. 12, 1898	25	Hon. W. A. C. BENNETT.....	Aug. 1, 1952
13	Hon. JOS. MARTIN.....	Feb. 28, 1900			

51.—Legislatures of British Columbia, 1937-59, as at Oct. 31, 1959

NOTE.—Legislatures from Confederation to 1923 are given in the 1924 Year Book, p. 83, and for 1924-37 in the 1938 edition, p. 118.

Date of Election	Legislature	Number of Sessions	Date of First Opening	Date of Dissolution
June 1, 1937	19th.....	5	Oct. 28, 1937	July 22, 1941
Oct. 21, 1941	20th.....	4	Dec. 4, 1941	Aug. 31, 1945
Oct. 25, 1945	21st.....	5	Feb. 21, 1946	Apr. 16, 1949
June 15, 1949	22nd.....	4	Feb. 14, 1950	Apr. 10, 1952
June 12, 1952	23rd.....	1	Feb. 3, 1953	Mar. 27, 1953
June 9, 1953	24th.....	4	Sept. 15, 1953	Aug. 13, 1956
Sept. 19, 1956	25th.....	1	Feb. 7, 1957	1

¹Life of Legislature not expired at Oct. 31, 1959.

52.—Twenty-Fifth Ministry of British Columbia, as at Oct. 31, 1959

(Party standing at latest General Election, Sept. 19, 1956: 39 Social Credit, 10 Co-operative Commonwealth Federation, 2 Liberal and 1 Labour.)

NOTE.—Ministers are shown at date of original appointment as a Minister and at date of appointment to present portfolio, despite the formation of a new Ministry consequent upon the appointment of a new Premier.

Office	Name	Date of First Appointment	Date of Present Appointment ¹
Premier, President of the Council and Minister of Finance.	Hon. WILLIAM ANDREW CECIL BENNETT.....	Aug. 1, 1952	Aug. 1, 1952
Provincial Secretary, Minister of Municipal Affairs, and Minister of Social Welfare....	Hon. WESLEY DREWETT BLACK...	Aug. 1, 1952	Mar. 20, 1959
Attorney General and Minister of Industrial Development, Trade, and Commerce.....	Hon. ROBERT WILLIAM BONNER...	Aug. 1, 1952	Mar. 28, 1957
Minister of Lands and Forests.....	Hon. RAY GILLIS WILLISTON.....	Apr. 14, 1954	Feb. 28, 1956
Minister of Agriculture.....	Hon. NEWTON PHILLIPS STEACY...	Sept. 13, 1957	Sept. 13, 1957
Minister of Mines.....	Hon. WILLIAM KENNETH KIERNAN	Aug. 1, 1952	Feb. 28, 1956
Minister of Highways.....	Hon. PHILIP ARTHUR GAGLARDI..	Aug. 1, 1952	Mar. 15, 1955
Minister of Labour and Minister of Commercial Transport.....	Hon. LYLE WICKS.....	Aug. 1, 1952	Mar. 20, 1959
Minister of Education.....	Hon. LESLIE RAYMOND PETERSON.	Sept. 27, 1956	Sept. 27, 1956
Minister of Health Services and Hospital Insurance.	Hon. ERIC CHARLES FITZGERALD MARTIN.....	Aug. 1, 1952	Mar. 20, 1959
Minister of Public Works.....	Hon. WILLIAM NEELANDS CHANT..	Mar. 15, 1955	Mar. 15, 1955
Minister of Recreation and Conservation...	Hon. EARLE CATHERS WESTWOOD.	Sept. 27, 1956	Mar. 28, 1957

¹ Minister not necessarily sworn in on date of appointment.

Subsection 11.—Yukon and Northwest Territories

Yukon Territory.—The Yukon was created a separate Territory in June 1898. Provision is made for a local government composed of a Chief Executive styled Commissioner and an elective Legislative Council of five members with a three-year tenure of office. The Commissioner administers the government under instructions from the Governor in Council or the Minister of Northern Affairs and National Resources. The Commissioner in Council has power to make ordinances dealing with the imposition of local taxes, sale of liquor, preservation of game, establishment of territorial offices, maintenance of prisons and municipal institutions, issue of licences, incorporation of companies, solemnization of marriage, property and civil rights, and generally all matters of a local nature in the Territory. The seat of local government is at Whitehorse, Yukon Territory.

TERRITORIAL COUNCIL

(Five members elected in 1958 for three years)

Dawson.....	G. SHAW	Whitehorse East.....	C. D. TAYLOR
Mayo.....	R. L. McKAMEY	Whitehorse West.....	J. SMITH
Carmacks.....	J. LIVESAY		

TERRITORIAL OFFICIALS

(As at Apr. 1, 1960)

Commissioner (Whitehorse).....	F. H. COLLINS
Superintendent of Works and Buildings.....	G. B. STARR
Registrar of Vital Statistics.....	H. J. TAYLOR

The Northern Administration Branch, Department of Northern Affairs and National Resources, has the responsibility for the general administration of the natural resources of the Yukon Territory, except game. The Department maintains three lands and mining offices at various points in the Territory. Other departments and agencies of the Federal Government, including the Department of Justice, the Royal Canadian Mounted Police, the Departments of National Defence, Citizenship and Immigration, Mines and Technical Surveys, National Revenue, Transport, Post Office, Agriculture, Fisheries, Public Works and the Unemployment Insurance Commission, also maintain offices in the Yukon Territory.*

Northwest Territories.—As reconstituted on Sept. 1, 1905, these comprise:—

- (1) all that part of Canada north of the Sixtieth Parallel of North Latitude, except the portions thereof within the Yukon Territory and the Provinces of Quebec and Newfoundland, and
- (2) the islands in Hudson Bay, James Bay and Ungava Bay, except those islands within the Provinces of Manitoba, Ontario and Quebec.

The Northwest Territories Act (RSC 1952, c. 331) provides for the appointment of a Commissioner to administer the government of the Territories under instructions given from time to time by the Governor in Council or the Minister of Northern Affairs and National Resources. As a matter of practice the appointment is held by the Deputy Minister of Northern Affairs and National Resources. For administrative purposes the Territories are divided into the provisional districts of Mackenzie, Keewatin and Franklin (Order in Council dated Mar. 16, 1918). The Northwest Territories Act, as amended, also provides for a Council of nine members, four of whom are elected in the Mackenzie District and five of whom are appointed by the Governor in Council. The Commissioner in Council has legislative powers respecting such matters as direct taxation, establishment and tenure of territorial offices, municipal institutions, controverted elections, licences, incorporation of companies, property and civil rights, administration of justice, game, education, hospitals and generally all matters of a local or private nature. The Council meets once each year in the Territories and at least once each year in Ottawa, which is the seat of government. The resources, except game, remain under the control of the Federal Government. The administration of legislation passed by the Commissioner in Council and the management of resources under federal legislation are carried on by the Northern Administration Branch of the Department of Northern Affairs and National Resources. Administrative offices are located in the Territories at Fort Smith, Yellowknife, Hay River and Inuvik.

COUNCIL OF THE NORTHWEST TERRITORIES

(As at Apr. 1, 1960)

Commissioner	R. G. ROBERTSON
Deputy Commissioner	W. G. BROWN
Members of the Council—	
Appointed	C. M. DRURY, H. M. JONES, W. G. BROWN, L. H. NICHOLSON (one vacancy)
Elected	K. LANG, J. W. GOODALL, R. C. PORRITT, E. J. GALL
Officers of the Council—	
Secretary	G. A. MacKINNON (acting)
Legal Adviser	E. R. OLSON

* Further information on officials of various Federal Government departments serving Yukon Territory may be obtained from the Director, Northern Administration Branch, Department of Northern Affairs and National Resources, Ottawa.

Section 3.—Municipal Government*

Municipal government in Canada is placed under the control of the provincial legislatures by the British North America Act, 1867. Thus the powers of municipalities are those delegated to them by statutes passed by their respective provincial governments, some of which apply to all municipalities within the province, some to a certain type or group, and many to one municipality only. Municipal powers are further defined by regulations issued (under the provisions of the Acts) by the provincial government departments charged with their supervision and control. In the Yukon and Northwest Territories some municipal powers have been assigned to certain localities by the Federal Government and the territorial councils.

While powers and responsibilities delegated to municipalities vary from province to province and even within a province, they are largely those of raising money locally, of borrowing, and of spending to provide local services. All provinces give financial assistance in some form, usually as subsidies or grants-in-aid of certain services administered by the municipalities, and often as loans on or guarantees of loans for capital projects. Retention or assumption of what are often regarded as municipal responsibilities is sometimes considered an indirect form of aid, as is the extension of taxing privileges into what may be commonly regarded as a provincial revenue field.

The major revenue source available to municipalities is property taxation. It is supplemented in varying degrees by taxation of personal property, business, persons (poll taxes), and tenants. In two provinces municipalities may levy an amusement tax, in three they may impose sales taxes on a limited basis, and in Quebec some cities have been granted the right to levy a general sales tax. Miscellaneous general revenue is derived from licences, permits, rents, concessions, franchises and fines. Most urban municipalities of any size operate utilities and enterprises for the provision of water and, in many instances, electricity, gas, transportation, telephone and other services. These sometimes provide surplus funds that may become available to help provide other municipal services. On the other hand, expenditures of municipalities often include provision for the deficits of utilities and enterprises.

In differing degree and with varying provincial assistance, municipalities are responsible for the following services: protection to persons and property through police and fire forces, courts and local gaols, and inspection services; roads and streets; sanitation; certain health and welfare services; and some recreation and other community services. Except in Quebec and Newfoundland and in a few minor localities where school authorities must raise funds for education not provided for by the province concerned, municipalities are responsible for levying and collecting local education taxes on property on behalf of the local schools, and often for borrowing capital funds for school construction. This stems from the traditional concept that education is a local responsibility, though it is now largely financed and administered by the provincial governments. Local administrative responsibility for education lies with boards of trustees separate from the councils that govern municipalities (except in Alberta; see p. 123).

In some localities, certain local services are administered by special district authorities encompassing a number of municipalities or parts of municipalities. These district authorities provide services, such as greater water and sewerage districts, drainage and irrigation districts, and health units, which elsewhere may be provided by the municipality directly or through a board or utility. They are, in effect, co-operative efforts or a modified form of metropolitan government. Metropolitan government is in existence in Toronto and partially in Montreal, and studies are under way for some other major cities.

* Prepared in the Public Finance and Transportation Division, Dominion Bureau of Statistics.

The following paragraphs describe municipal organization in each province as at Jan. 1, 1959. In Table 53, which gives the number of each type of municipality in each province, all fully incorporated cities, towns and villages are regarded as urban municipalities. It is difficult to apply arbitrary definitions, such as that which classifies as urban centres all places having a population of 1,000 or more persons.

Newfoundland.—The Province of Newfoundland has two cities—St. John's and Corner Brook. A number of the province's many settlements have been organized into 33 towns, four rural districts, three local improvement districts and 32 local government communities. The towns, rural districts and local improvement districts operate under the Local Government Act; towns and rural districts have elected councils and local improvement districts have appointed trustees. Local government communities established under the Community Councils Act in the smaller settlements have limited powers and functions. There are no rural municipalities in the usual sense. Thus, between 40 p.c. and 50 p.c. of the population of the province is now organized in some form of local authority but only about one-fifth of 1 p.c. of the total area is so governed. Municipalities are supervised by the Department of Municipal Affairs and Supply.

Prince Edward Island.—In this island province, one city and seven towns have been incorporated under special Acts and 16 villages have been established under the Village Services Act. There is no municipal organization for the remainder of the province though it is divided into school sections.

Nova Scotia.—Municipal organization in Nova Scotia covers the whole of the province. The two cities, Halifax and Sydney, operate under special charters and special legislation. Forty towns operate under the Town Incorporation Act but there are no municipalities incorporated as villages. Cities and towns are independent of counties. The rural area is divided into 18 counties which, in themselves, do not represent units of local government. However, 12 of these counties each comprise one municipality and the other six each comprise two municipalities, making a total of 24 rural municipalities. Supervision of municipalities is exercised through the Department of Municipal Affairs.

New Brunswick.—This province is divided into 15 counties which are incorporated municipalities and have direct powers of local self-government as rural municipalities, though certain of their powers often apply in both rural and urban municipalities. The six cities have special charters, and the 20 towns operate under the Towns Incorporation Act. There is one village and 54 local improvement district areas within the counties but outside the cities, towns and villages; these have been incorporated for the provision of limited municipal services. The Department of Municipal Affairs exercises supervision.

Quebec.—Municipal divisions in Quebec embrace the more thickly settled areas comprising about one-third of the province and the remainder is governed by the province as "territories". The organized area is divided into 74 county municipalities which are divided again into local municipalities and designated as village, township or parish municipalities or simply as municipalities. The counties as such have no direct powers of taxation. Funds to finance the services falling within their jurisdiction are provided by the municipalities forming part thereof. Parts of some counties are not yet organized into incorporated units of local government, being in outlying areas with little or no population. There are 336 villages and 1,119 townships and parishes. A small number of these are independent of the counties in which they are located. The Municipal Code governs local municipalities, and the 54 cities and 160 towns have special Acts. The supervision and assistance of municipalities is through the Department of Municipal Affairs and the Quebec Municipal Commission. Municipal statistics are gathered by the Quebec Bureau of Statistics.

Functions of the Montreal Metropolitan Commission, established in 1921 to assist municipalities of greater Montreal which had experienced some degree of financial difficulty, were transferred at the end of 1959 to the Montreal Metropolitan Corporation; it is intended that, eventually, the Corporation will take on more of the functions of an over-all metropolitan administration.

The County of Laval was replaced in March 1959 by the Interurban Corporation of Île Jésus in order to facilitate solution of inter-municipal problems on the island.

Ontario.—Slightly more than one-tenth of the area of Ontario is municipally organized and the remainder is governed entirely by the provincial government. The older settled section of the province is divided into 43 counties, five of which are united with others for administrative purposes. Each county, although it is an incorporated municipality, is comprised of the towns, villages and townships situated within its borders, and these provide its revenue. The Municipality of Metropolitan Toronto encompasses one city, four towns, three villages and five townships. There are 30 cities, 157 towns, 154 villages, 573 townships and 24 improvement districts in the province. Some of each are located in the northern districts which are not organized into counties. Supervisory control of municipalities is exercised by the Department of Municipal Affairs and the Ontario Municipal Board under the Municipal Act and other Acts governing aspects of municipal government.

Manitoba.—Manitoba has six cities, which derive their powers from special Acts and do not come under the supervision of the Department of Municipal Affairs. The Department supervises the 35 towns, 37 villages and 112 rural municipalities under the Municipal Act. There are local government districts in settled areas not within rural municipalities.

Saskatchewan.—All municipalities in Saskatchewan derive their powers from general Acts that are designated with the name of the type of municipality. There are 10 cities, 104 towns, 371 villages and 296 rural municipalities. The area so organized consists of most of the southern two-fifths of the province—the remainder of this portion is administered for local purposes by the province in unincorporated local improvement districts. The northern three-fifths is sparsely populated and without local government, though some municipal services are provided by the province through operation of the Northern Administrative Area. Municipalities are supervised by the Department of Municipal Affairs.

Alberta.—The province has an Act applying to each type of municipality, and under these Acts the Department of Municipal Affairs supervises the nine cities, 86 towns, 156 villages, 38 municipal districts and 12 counties. The latter administer schools as well as municipal services.

British Columbia.—Less than one-half of 1 p.c. of the area of British Columbia is organized into municipalities. Additional small areas have sufficient population to require administration of local activities by the provincial government. There are 32 cities, three towns, 60 villages, and 30 districts; the latter are chiefly rural municipalities, except for those adjacent to the principal cities of Victoria and Vancouver which are largely urban in character. It should be emphasized, however, that the application of the name "city" is somewhat different from the commonly accepted meaning, in that several of them have populations of fewer than 1,000 and perhaps one-half or more would not normally be incorporated as cities in another province. Legislation of 1957 provided

for the incorporation of towns; by the beginning of 1959 three villages had attained town status and three cities had reverted to village status. Municipalities are supervised by the Department of Municipal Affairs.

Yukon and Northwest Territories.—There are two cities and one town in the Yukon Territory and two local administrative districts in the Northwest Territories, all of which provide some municipal services to their local areas. These are not shown in Table 53.

53.—Official Designation and Statistical Classification of Municipalities, by Province, as at Jan. 1, 1959

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
OFFICIAL DESIGNATION ¹											
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Local municipalities.....	74	24	66	42 ³	1,669	938	190	781	301	125	4,210
Cities.....	2	1	2	6	54	30	6	10	9	32	152
Towns.....	40 ⁴	7	40	20	160	157	35	104	86	3	652
Villages.....	32 ⁵	16	...	1	336	154	37	371	156	60	1,163
Rural ⁶.....	...	...	24	15	1,119	597 ⁷	112 ⁸	296 ⁹	50 ¹⁰	30 ¹¹	2,243
Quebec and Ontario counties	...	...	...	...	75 ¹²	39 ¹³	...	...	...	...	114
Totals, Incorporated Municipalities.....	74	24	66	42	1,744	977	190	781	301	125	4,324
STATISTICAL CLASSIFICATION ²											
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Municipalities in metropolitan areas ¹⁴	2	...	3	5	76	39	14	...	11	19	169
Urban.....	2	...	2	3	58	22	7	...	6	7	107
Rural.....	...	...	1	2	18	17	7	...	5	12	62
Other urban municipalities..	72	24	40	24	492	319	71	485	245	88	1,860
Other rural municipalities...	...	...	23	13	1,101	580	105	296	45	18	2,181
Semi-urban.....	...	...	...	...	...	57 ¹⁵	...	...	...	...	57
Other.....	...	...	23	13	1,101	583	105	296	45	18	2,124
Quebec and Ontario counties	...	...	...	...	75	39	...	...	...	...	114
Totals, Incorporated Municipalities.....	74	24	66	42	1,744	977	190	781	301	125	4,324

¹ Municipalities grouped according to their official nomenclature, which is roughly indicative of size and nature (see footnote 6). ² Municipalities grouped under the classification devised by the Dominion-Provincial Conferences on Municipal Statistics, designed to bring municipalities into comparable groups for statistical presentation.

³ Excludes 54 local improvement districts. ⁴ Designated by the province as towns (33), rural districts (4), and local improvement districts (3); all operate under the same Act. ⁵ Classified by the province as "community councils". ⁶ Rural municipalities are designated by different names in the different provinces.

⁷ Includes 24 improvement districts. ⁸ Includes 3 units of self-government known as "suburban municipalities"; excludes local government districts. ⁹ Excludes 12 local improvement districts. ¹⁰ Includes 12 county municipalities; excludes 50 improvement districts and two special areas. ¹¹ Excludes 2 local districts.

¹² The County of Laval has been replaced by the Interurban Corporation of Ile Jésus (see text). ¹³ Includes Municipality of Metropolitan Toronto. ¹⁴ Includes municipalities shown wholly or partly in metropolitan areas by 1956 Census revised to take care of later annexations, etc.; excludes the Municipality of Metropolitan Toronto.

¹⁵ Classified by province as suburban and semi-urban.

Section 4.—Federal and Provincial Royal Commissions

Federal Royal Commissions.—Royal Commissions established from Jan. 31, 1958 to Jan. 31, 1960 under Part I of the Federal Inquiries Act are given here in continuation of those previously reported in the Year Books beginning with the 1940 edition, pp. 1108-1110. Any Commissions established between Jan. 31, 1960 and the date of going to press will be found in an Appendix to this volume.

<i>Nature of Commission</i>	<i>Commissioner</i>	<i>Date Established</i>
To inquire into the desirability of establishing a new band of Indians on Seabird Island, B.C.	GEORGE L. CASSADY.....	Mar. 12, 1958
To inquire into and report upon the problems relating to railway transportation in Canada.	Hon. CHARLES P. McTAGUE (later succeeded by MURDOCH ALEXANDER MACPHERSON).	June 8, 1959
To inquire into the respective merits of alternate routes for a railway line from northern Alberta to southern portion of the District of Mackenzie, N.W.T.	MARSHALL E. MANNING.....	June 22, 1959
To inquire into the coal industry.....	Hon. IVAN CLEVELAND RAND.....	Oct. 23, 1959

Provincial Royal Commissions.—The following list of Provincial Royal Commissions established is in continuation of those appearing in previous Year Books beginning with the 1948-49 edition.

<i>Province and Nature of Commission</i>	<i>Commissioner or Chairman</i>	<i>Date Established</i>
NOVA SCOTIA		
To make public inquiry under the Rentals Act.	Hon. GEORGE M. MORRISON.....	Apr. 14, 1959
To inquire into the Springhill mine disaster....	DONALD McINNIS.....	Dec. 12, 1958
To inquire into the Nova Scotia Elections Act.	His Hon. Judge RALPH H. SHAW....	Aug. 7, 1959
NEW BRUNSWICK		
To study the coal resources of the Province of New Brunswick.	WILLIAM Y. SMITH.....	Oct. 17, 1958
MANITOBA		
To inquire into and investigate all negotiations, transactions and matters in connection with the acquiring of interests in petroleum, natural gas and related hydrocarbons, etc.	WINSTON EWART NORTON.....	Mar. 11, 1959
To inquire into the economic and social consequence of the colouring of margarine, similar to butter, etc.	WILLIAM J. WAINES.....	Oct. 14, 1959
BRITISH COLUMBIA		
To inquire into the rate structure, etc., of the British Columbia Power Commission.	GORDON MERRITT SHRUM.....	Nov. 21, 1958
To examine the transcript of evidence given in connection with the application of Empire Mills Limited of Squamish for a tree-farm licence; to make further inquiry and report upon the question: "Should the area applied for by Empire Mills Limited, Squamish, be managed under a tree-farm licence?"	His Hon. Judge CHARLES WILLIAM MORROW.	July 27, 1959

PART III.—ADMINISTRATIVE FUNCTIONS OF THE FEDERAL GOVERNMENT*

A special article presenting information on the administration and control of the financial affairs of the Federal Government appears in the 1956 Year Book at pp. 101-107.

Section 1.—Departments, Boards, Commissions, etc.

The following paragraphs indicate the functions of the various departments of government and the special boards and commissions in connection with the work of government.

Though it is not possible, owing to the limitations of space, to enumerate in this Section the details of each service or the divisions or sections of all departments, the main branches are given along with those services that differ in some quality from the larger class of subjects handled by a department. The work of many of these departments and boards is given in detail in later Chapters of this volume. The Index will be useful in locating required information.

Department of Agriculture.—This Department was established in 1867 (SC 1868, c. 53) and undertakes work on all phases of agriculture. Research and experimentation are carried out by the Research Branch; the maintenance of standards and protection of products by the Production and Marketing Branch; reclamation and development by the Prairie Farm Rehabilitation Administration and the Maritime Marshland Rehabilitation Administration; security and price stability policies are administered under the Prairie Farm Assistance Administration and Agricultural Stabilization Board. The Farm Credit Corporation which succeeded the Canadian Farm Loan Board on Oct. 5, 1959 is responsible to Parliament through the Minister of Agriculture.

Air Transport Board.—The Air Transport Board was established in 1944 by amendment of the Aeronautics Act. The Board is responsible for the economic regulation of commercial air services in Canada. The regulatory function relates to Canadian air services within Canada and abroad, and to foreign air services operating into Canada. It involves the licensing of all such services and the subsequent regulation of the licensees in respect of their economic operation and the provision of service to the public. The Board reports to Parliament through the Minister of Transport.

Auditor General's Office.—This Office originated in 1878 (SC 1878, c. 7) and currently functions under the Financial Administration Act (RSC 1952, c. 116). The Auditor General is responsible for examining accounts relating to the Consolidated Revenue Fund and to public property, and for reporting annually to the House of Commons the results of his examinations. He also audits the accounts of various Crown corporations and other instrumentalities.

Board of Broadcast Governors.—This Board was established pursuant to the Broadcasting Act assented to on Sept. 6, 1958 and is responsible for the regulation of radio and television broadcasting in Canada. This regulatory function includes the establishment and operations of networks of broadcasting stations, the activities of public and private broadcasting stations in Canada and the relationship between them. Applications for licences to establish new broadcasting stations and for changes in conditions of existing licences or changes in the ownership or share structure of licensees are referred to the Board by the Department of Transport for a recommendation to the Minister of Transport. The Board consists of three full-time members and twelve part-time members and reports to Parliament through the Minister of National Revenue.

Board of Grain Commissioners.—Constituted in 1912 under the Canada Grain Act, now the Canada Grain Act, 1930 (RSC 1952, c. 25), the Board of Grain Commissioners provides general supervision over grain handling in Canada by licensing elevator operators, inspecting and weighing grain en route to and shipped from terminal elevators, and other services. The Board, comprising a Chief Commissioner and two Commissioners, has authority to inquire into any matter relating to the grading and weighing of grain, deductions for dockage or shrinkage, deterioration of any grain during storage or treatment, unfair or discriminatory operation of a grain elevator, etc. The Board publishes its regulations in the *Canada Gazette* and reports to Parliament through the Minister of Trade and Commerce.

Board of Transport Commissioners.—The powers of this Board, which was organized as the Board of Railway Commissioners in 1904, have been extended from time to time until today it has regulatory and judicial functions dealing with almost all aspects of railway activity including

* As at Oct. 31, 1959; any changes taking place between that date and the date of going to press will be carried in an Appendix to this volume and in the accompanying chart showing the organization of the Government of Canada.

location, construction and operation of lines, rates and charges. It is also entrusted with the regulation of other transportation and communication agencies, including express companies, telegraph companies, telephone companies other than those provincially or municipally controlled, international bridges and tunnels and inland shipping. The Board reports to Parliament through the Minister of Transport.

Canadian Government Specifications Board.—This is an interdepartmental body composed of the Deputy Heads of 24 Federal Government departments and agencies. The Board operates under the auspices of the National Research Council, through the medium of committees in which government and industry co-operate on a voluntary basis. The Board prepares specifications in commodity fields and for materials, processes and equipment required by government agencies, and arranges for necessary testing and research. An Index of Specifications is available on request to the CGSB Secretary, National Research Council, Ottawa.

Chief Electoral Office.—This Office was established in 1920 under the provisions of the Dominion Elections Act, now the Canada Elections Act (RSC 1952, c. 23), and amendments thereto, and is responsible for the conduct of all federal elections as well as the elections of members of the Northwest Territories Council and of the Yukon Territory Council. In addition it conducts any vote taken under the Canada Temperance Act. The Chief Electoral Officer reports to Parliament through the Secretary of State.

Department of Citizenship and Immigration.—This Department was constituted in December 1949 (RSC 1952, c. 67) and came into existence on Jan. 18, 1950 under the Minister of Citizenship and Immigration. Most departmental work is carried on through four branches. The Canadian Citizenship Branch assists governmental and non-governmental agencies engaged or interested in facilitating the adjustment and integration of newcomers and in making Canadians conscious of their privileges and responsibilities as citizens. The Canadian Citizenship Registration Branch administers the Canadian Citizenship Act and is the custodian of all records under that Act and all Naturalization Acts previously in force. The Immigration Branch administers the Immigration Act and Regulations and is responsible for the selection, examination and movement of immigrants, the exclusion or deportation of undesirables and the settlement or establishment of immigrants in Canada. The activities of the Indian Affairs Branch include management of all Indian affairs. Its organization consists of a headquarters office at Ottawa, a regional supervisory staff, and 89 local agencies in the field.

The Minister of Citizenship and Immigration is responsible to Parliament for the National Film Board, the National Library, the Public Archives, and the National Gallery of Canada.

Civil Service Commission.—The Civil Service Commission of Canada dates from the Civil Service Act of 1903. Under this Act the Commission was given the responsibility of applying, wherever possible, the principle of appointment by merit in filling permanent positions within departmental headquarters positions at Ottawa, termed the 'inside service'.

The Civil Service Act, 1918 extended the competitive system of appointments to cover the outside as well as the inside service and temporary as well as permanent appointments. It made the Commission responsible for establishing a system of organization and classification that would secure uniformity in the staffing of the various departments and in the salaries paid for work of equal levels of difficulty and responsibility.

The jurisdiction of the Commission now extends to all departments of the Federal Government and to a large number of boards and commissions, exclusive of Crown corporations.

The Civil Service Commission, which is responsible not to the executive government but only to Parliament, consists of three members, one of whom serves as chairman. Each member of the Commission is appointed by the Governor in Council for a term of ten years and each has the rank and standing of a Deputy Minister. The Commission has a staff of approximately 660 persons located in the headquarters office at Ottawa and in district offices at St. John's, Nfld., Halifax, N.S., Saint John, N.B., Montreal, Que., Toronto, Ont., Winnipeg, Man., Regina, Sask., Edmonton, Alta., and Vancouver, B.C.

Department of Defence Production.—This Department was established on Apr. 1, 1951 under the provisions of the Defence Production Act (RSC 1952, c. 62, as amended). Under this Act the Minister is given, with certain exceptions, authority to buy defence supplies and construct defence projects required by the Department of National Defence. The Minister may, if authorized by the Governor General in Council, undertake for an associated government anything he may undertake for the Canadian Government. In addition, all powers, duties and functions that theretofore were vested in the Minister of Trade and Commerce under any contract, agreement, lease or other writing entered into pursuant to the Department of Munitions and Supply Act, 1939, or the Defence Supplies Act, 1950, are vested in the Minister of Defence Production.

Broadly, the Department's functions are to procure military goods, to construct defence installations and to organize industry for defence as required on behalf of the Department of National Defence, other government departments, and associated governments; to promote the expansion of defence production facilities and the development of defence-supporting industries particularly

of strategic resources important for the defence of Canada and its allies; and to ensure adequate supplies of essential materials and services for defence requirements. The main procurement units of the Department are six production branches—Aircraft, Ammunition, Electronics, Gun, Machine Tool and Shipbuilding—and a General Purchasing Branch. Major offices for foreign procurement are located at London, England, and Washington, U.S.A.; the General Purchasing Branch has 14 district purchasing offices located throughout Canada for local or urgent procurement. In addition, there are various service branches which include Administration, Comptroller's, Economics and Statistics, Financial Adviser's, Industrial Security, Legal, and Secretary's.

The following Crown companies report to Parliament through the Minister of Defence Production: Canadian Arsenals Limited, Canadian Commercial Corporation, Crown Assets Disposal Corporation, Defence Construction (1951) Limited, and Polymer Corporation Limited.

Dominion Bureau of Statistics.—The Dominion Bureau of Statistics was set up by statute in 1918 as a central statistical department for Canada (SC 1918, c. 43). In 1948 this statute, which had been consolidated as the Statistics Act (RSC 1927, c. 190), was repealed and replaced by the Statistics Act (RSC 1952, c. 257); it was amended by SC 1952-53, c. 18, assented to Mar. 31, 1953.

The function of the Dominion Bureau of Statistics is to compile, analyse and publish statistical information relative to the commercial, industrial, financial, social and general condition of the people and to conduct a census of population and agriculture of Canada as required under the Act.

The Bureau is a major publication agency of the Federal Government; the subjects of its reports cover all aspects of the national economy. The administrative head of the Bureau is the Dominion Statistician who reports to Parliament through the Minister of Trade and Commerce.

Department of External Affairs.—This Department was established in 1909 by "An Act to create a Department of External Affairs" (RSC 1952, c. 68). Its main function is the protection and advancement of Canadian interests abroad. The head of the Department of External Affairs is the Secretary of State for External Affairs. The senior permanent officer of the Department is the Under-Secretary (Deputy Minister) who is the chief adviser to the Secretary of State for External Affairs. He is assisted by a Deputy Under-Secretary and by four Assistant Under-Secretaries, one of whom is Legal Adviser, and is advised by officers in charge of the various divisions, each responsible for a part of the work of the Department. The divisional heads are assisted by Foreign Service Officers, Administrative Officers and by an administrative staff. Officers serving abroad are formally designated as High Commissioners, Ambassadors, Ministers, Counsellors, First, Second, Third Secretaries and Attachés at diplomatic posts and as Consuls General, Consuls and Vice-Consuls at consular posts. About 65 diplomatic and consular posts are maintained abroad.

The work of the Department at Ottawa is performed by 20 divisions, which may be grouped according to their functions into three categories—political, functional and administrative. There are five political divisions—American, Commonwealth, European, Middle Eastern and Far Eastern; ten functional divisions—Communications, Consular, Defence Liaison (1) and (2), Economic (1) and (2), Information, Legal, Historical Research and Reports, Protocol and United Nations; and four administrative divisions—Administrative Services, Finance, Personnel, and Supplies and Properties. There are also three smaller sections—Inspection Service, Political Co-ordination Section and the Press Office.

Department of Finance.—This Department, created on June 22, 1869 by an Act respecting the Department of Finance (SC 1869, c. 4), is under the authority of the Minister of Finance. The Department is responsible for the financial administration of Canada including raising the money required for the various governmental activities by way of taxation or borrowing. The Comptroller of the Treasury, an officer of the Department, is responsible for all Government disbursements. The work of the Department is organized in six principal divisions: Administration, Economic and International Affairs, Federal-Provincial Relations, Farm Improvement Loans, Taxation and Treasury Board. The Royal Canadian Mint is a branch of the Department and the Inspector General of Banks is an officer of the Department.

The Tariff Board is responsible to Parliament through the Minister of Finance.

Department of Fisheries.—The Department of Fisheries was first organized under a Minister of Fisheries in 1930. Prior to that date the federal fisheries services were maintained by the former Department of Marine and Fisheries, established in 1868. The provinces, under various arrangements, have certain administrative responsibilities in the fisheries but the legislative authority for the regulations of coastal and freshwater fisheries is with the federal Department of Fisheries.

The work of the Department includes: conservation and development of the fisheries through the enforcement of fishing regulations, the operation of fish culture establishments, management and improvement of spawning streams and control of predators; inspection of fish products for quality control and the encouragement of industrial development; promotion of the greatest utilization of fishery products and a proper public understanding of the resource and the industry. The Department administers the Fishermen's Indemnity Plan to assist fishermen in the event of loss or serious damage to their fishing vessels or lobster traps.

Agencies connected with the Department are the Fisheries Prices Support Board and the Fisheries Research Board of Canada. The Department is represented on the following international commissions: Pacific Salmon Fisheries, Pacific Halibut, the Northwest Atlantic Fisheries, North Pacific Fisheries, Whaling, and Great Lakes Fishery, and participates in an international agreement controlling the take of Pribilof seals.

Fisheries Research Board.—The Fisheries Research Board operates under the Fisheries Research Board Act of 1937 (amended in 1947 and 1952-53). It has been active as a fisheries research body since 1898, first as the Board of Management of the Canadian Marine Biological Station and later (1912) as the Biological Board of Canada.

The Board operates under the Minister of Fisheries and membership consists of a full-time chairman and up to 18 members appointed by the Minister from among leading Canadian scientists and business men with a knowledge of fishery problems, and senior officers of the Department of Fisheries.

The Board operates five biological stations across Canada, three technological stations with two application units and two oceanographic groups. It serves as the scientific arm of the Department of Fisheries and its principal objective is to increase the scope and value of Canadian fisheries through scientific research.

Department of Insurance.—The Minister of Finance is responsible for the Department of Insurance which originated in 1875 as a branch of the Department of Finance but was constituted a separate Department in 1910. It is authorized and governed by the Department of Insurance Act (RSC 1952, c. 70). Under the Superintendent of Insurance, the Department administers the statutes of Canada applicable to: insurance, trust and loan companies incorporated by the Parliament of Canada; provincially incorporated insurance companies registered with the Department; British and foreign insurance companies operating in Canada; small loans companies and money-lenders; co-operative credit societies registered under the Co-operative Credit Associations Act; and Civil Service insurance.

Under the relevant provincial statutes the Department examines provincial trust companies in the Provinces of Manitoba and New Brunswick and loan and trust companies in the Province of Nova Scotia.

International Joint Commission.—This Commission was established under a Great Britain-United States treaty, Jan. 11, 1909, ratified by Canada in 1911. The Commission, composed of six members (three appointed by the President of the United States and three by the Government of Canada) is governed by five specific Articles of the Boundary Waters Treaty of 1909. The Commission's approval is required for any use, obstruction or diversion of boundary waters affecting the natural level or flow of boundary waters in the other country; and for any works in waters flowing from boundary waters or below the boundary in rivers flowing across the boundary which raise the natural level of waters on the other side of the boundary.

Problems arising along the common frontier are also referred to the Commission by either country for examination and report, such report to contain appropriate conclusions and recommendations. In addition, questions or matters of difference between the two countries may be referred to the Commission for decision, provided both countries consent.

The Commission reports to the Secretary of State for External Affairs of Canada and to the Secretary of State of the United States.

Department of Justice.—This Department, established by SC 1868, c. 39, now operates under authority of the Department of Justice Act (RSC 1952, c. 71). It provides legal services to the Government and various government departments including preparing and settling government legislation, settling instruments issued under the Great Seal of Canada, regulating and conducting litigation for or against the Crown, superintending the acquisition of property and prosecutions under federal legislation other than the Criminal Code, administers federal statutes dealing with legal matters and provides administrative services for the Supreme Court of Canada and the Exchequer Court. The Department also superintends the penitentiaries and administers the prison system of Canada.

The Commissioner of the Royal Canadian Mounted Police operates under the direction of the Minister of Justice who also reports to Parliament for the National Parole Board.

Department of Labour.—The Department of Labour was established in 1900 by Act of Parliament (SC 1900, c. 24) and now operates under authority of the Department of Labour Act (RSC 1952, c. 72). The Department administers, under the Minister of Labour, legislation dealing with: industrial relations, investigation of disputes, etc.; fair employment practices; the regulation of fair wages and hours of labour; reinstatement in civil employment; female employee equal pay; government annuities; government employee compensation; merchant seamen compensation; vocational training; annual vacations with pay. It promotes joint consultation in industry through labour-management committees; provides co-ordination of services for rehabilitation of disabled civilians; organizes manpower utilization programs, e.g., farm labour; and operates a Women's Bureau. The Department publishes the *Labour Gazette* and other publications, as well as general information on labour-management, employment, manpower and related subjects.

The Canada Labour Relations Board acts on behalf of, and the Vocational Training Advisory Council acts in an advisory capacity to the Minister of Labour, and the Merchant Seamen Compensation Board reports to the Minister of Labour. The Department is the official liaison agency between the Canadian Government and the International Labour Organization.

The Unemployment Insurance Commission, which maintains the National Employment Service, reports to the Minister of Labour.

Department of Mines and Technical Surveys.—This Department was created by an Act of Parliament (SC 1949, c. 17) which received Royal Assent on Dec. 10, 1949. Its establishment resulted from the reorganization of certain former departments. A primary function of the Department is to provide technological assistance in the development of Canada's mineral resources through investigations and research in the fields of geology, mineral dressing and metallurgy. The Department establishes the framework of surveys throughout the country that provides control for all surveying and mapping in Canada. It produces the base maps used in the development of Canada's natural resources, conducts all the charting of Canada's coastal and inland waters, and issues official sailing directions and Canadian sea and air navigation charts. The Department is under the Minister of Mines and Technical Surveys and is divided into five branches: the Surveys and Mapping Branch, the Geological Survey of Canada, the Mines Branch, the Dominion Observatories, and the Geographical Branch. The Mineral Resources Division, a unit of head office, gives its whole attention to matters concerned with the economics of mineral resources development.

The Department administers the Explosives Act which regulates the manufacture, testing, sale, storage and importation of explosives, and the Emergency Gold Mining Assistance Act which provides cost-aid to the Canadian gold mining industry.

Boards and Commissions are: Canadian Board on Geographical Names; Board of Examiners for Dominion Land Surveyors; the International Boundary Commission and Interprovincial Boundary Commissions.

Department of National Defence.—The Department of National Defence was established on Jan. 1, 1923 by the Department of National Defence Act, 1922, and was an amalgamation of the Department of Militia and Defence, the Naval Service and the Air Board. The Department and the Canadian Forces (the Royal Canadian Navy, the Canadian Army and the Royal Canadian Air Force) now operate under the National Defence Act, 1950 (RSC 1952, c. 184).

In 1940 additional Ministers for Naval and Air Services were appointed and the Department was organized under a Minister of National Defence and two additional Ministers so that there was a Minister and staff for each of the Armed Services. Upon demobilization of the wartime Forces the appointment of Ministers of National Defence for Naval Services and Air Services ceased, and the Armed Forces were, in 1946, again administered by the Minister of National Defence without additional Ministers. Under the National Defence Act, the Canadian Forces are being administered solely by the Minister of National Defence and the Associate Minister of National Defence.

The Defence Research Board, created in 1947 to carry out research relating to national defence and to advise the Minister on all relevant matters of a scientific or technical nature, now functions under the National Defence Act. The Chairman of the Board has a status equivalent to that of a Chief of Staff of one of the Canadian Forces.

National Film Board.—The National Film Board, established in 1939, operates under the National Film Act (RSC 1952, c. 185) which provides for a Board of Governors of nine members—a Government Film Commissioner, appointed by the Governor in Council, who is Chairman of the Board, three members from the public service of Canada and five members from outside the public service. The Board reports to Parliament through a designated Minister of the Crown (at present the Minister of Citizenship and Immigration). The Board is responsible for advising the Governor in Council on film activities and is authorized to produce and distribute films in the national interest and, in particular, films "designed to interpret Canada to Canadians and to other nations".

Department of National Health and Welfare.—This Department was established in October 1944 under authority of the Department of National Health and Welfare Act (RSC 1952, c. 74). It was originally formed as the Department of Health in 1919 and later became part of the Department of Pensions and National Health. This Department was replaced in 1944 by the Department of National Health and Welfare and the Department of Veterans Affairs.

The Department, headed by the Minister of National Health and Welfare, is composed of three branches—Administration, Health, and Welfare—and is administered by two Deputy Ministers.

The Department has charge of all matters relating to the promotion or preservation of the health, social security and social welfare of the people of Canada over which the Federal Parliament has jurisdiction. It administers the Acts listed in Section 3, p. 143, and is also responsible for: the administration of the National Health Program under which grants are made available to the provinces for the development and extension of health services; the federal aspects of emergency health and welfare services; the provision of health, medical and hospital services to Indians and Eskimos and to other elements of the population in the Yukon and Northwest Territories; the provision of assistance and consultative services to the provinces upon request on blindness control, child and maternal health, mental health, dental health, nursing, medical rehabilitation, nutrition and hospital design; the inspection and medical care of immigrants and seamen and the administration of marine hospitals; the supervision of public health facilities on railway, water and other

forms of transportation; the enforcement of regulations of the International Joint Commission relating to public health; the promotion and conservation of the health of civil servants and other government employees; the collection, publication and distribution, subject to the provisions of the Statistics Act, of information relating to public health, improved sanitation and social and industrial conditions affecting the health of Canadians.

National Library.—As a result of the National Library Act proclaimed Jan. 1, 1953, the National Library superseded the Canadian Bibliographic Centre. It continues to publish *Canadiana*, a monthly list of new publications relating to Canada, with a yearly cumulation. The Library also publishes other bibliographies. Its Reference Division maintains the National Union Catalogue which embodies the catalogues of the major libraries in the ten provinces and is a key to the book collections in the whole country. The National Librarian reports to the Minister of Citizenship and Immigration.

National Parole Board.—The establishment of the National Parole Board, which was formed in January 1959, is authorized by the Parole Act (SC 1958, c. 38) by which it is given absolute jurisdiction over all matters of parole. It is composed of a chairman and three members appointed by Order in Council for a ten-year period. The Board reports to Parliament through the Minister of Justice.

Department of National Revenue.—From Confederation until May 1918, customs and inland revenue Acts were administered by separate departments; after that date they were amalgamated under one Minister as the Department of Customs and Inland Revenue. In 1921 the name was changed to the Department of Customs and Excise. In April 1924 collection of income taxes was placed under the Minister of National Revenue and, under the Department of National Revenue Act, 1927, the Department became known as the Department of National Revenue.

The Customs and Excise Division of the Department is responsible for the assessment and collection of customs and excise duties as well as sales and excise taxes, by ports and outposts. The Taxation Division is responsible for the assessment and collection of income taxes and estate taxes by 29 district offices throughout Canada.

The Minister of National Revenue is responsible to Parliament for the Income Tax Appeal Board and also reports to Parliament for the Canadian Broadcasting Corporation and the Board of Broadcast Governors.

Department of Northern Affairs and National Resources.—The Department of Northern Affairs and National Resources was established in December 1953, superseding the Department of Resources and Development. In addition to Administration Services, which performs auxiliary functions, the Department is divided into seven branches: the National Parks Branch administers the National Parks and National Historic Parks of Canada, National Historic Sites, and wildlife matters coming within the jurisdiction of the Federal Government; the Water Resources Branch is responsible for the investigation of water power resources, for the administration of federal assistance to the provinces under the Canada Water Conservation Assistance Act and for federal interests in certain joint federal-provincial construction projects; the Northern Administration Branch is responsible for the administration of various federal Acts, territorial ordinances and regulations pertaining to the government of the Northwest Territories, for the conduct of certain business arising from the general administration of the Yukon Territory, for the administration of natural resources in those Territories, and for Eskimo affairs, as well as for certain lands and mineral rights in the provinces vested in the Crown in the right of Canada; the Forestry Branch conducts investigations in the protection and utilization of the forest resources of Canada, maintains forest experiment stations and forest products laboratories and administers federal assistance to the provinces under the Canada Forestry Act; the Natural History Branch and Human History Branch of the National Museum of Canada are responsible for research, publication of scientific studies, and public exhibitions in their respective fields of natural history and human history; and the Canadian Government Travel Bureau promotes the tourist industry by encouraging tourist travel in Canada.

The Minister of Northern Affairs and National Resources is also responsible to Parliament for the Eastern Rockies Forest Conservation Board, the Northern Canada Power Commission, and the National Battlefields Commission. The Historic Sites and Monuments Board of Canada, an honorary body of recognized historians representing the various provinces, and the Advisory Board on Wildlife Protection act in an advisory capacity to the Minister in their respective fields. The Deputy Minister is Commissioner of the Northwest Territories.

Post Office Department.—Administration and operation of the Canada Post Office, by virtue of the Post Office Act (RSC 1952, c. 212) and under the Postmaster General, includes all phases of postal activity, personnel, mail handling, transportation of mails by land, water, rail and air and the direction and control of financial services including the operation of money order and savings bank business.

Public Archives.—The Public Archives was founded in 1872 and is administered under the Public Archives Act (RSC 1952, c. 222) by the Dominion Archivist who has the rank of a Deputy Minister and reports to Parliament through the Minister of Citizenship and Immigration. Its purpose is to assemble and make available to the public a comprehensive collection of historical source material relating to the history of Canada. Major emphasis is placed on official records

of the Government and the personal papers of political leaders and other prominent figures. These are supplemented by copies of many records in the British and French archives that relate to Canada, a fine map collection, a historical library, and many prints, paintings and photographs.

Department of Public Printing and Stationery.—This Department was established in 1886 and is in the charge of the Queen's Printer and Controller of Stationery.

The Department is responsible for supplying all requirements of printing and stationery to Parliament and departments of the Canadian Government; the cataloguing, distribution and sale of government publications; the publication of the *Canada Gazette*, and all departmental reports, papers, etc., required to be published by authority of the Governor General in Council (RSC 1952, c. 226) and the publication of the Statutes of Canada (RSC 1952, c. 230).

The Department of Public Printing and Stationery is under the jurisdiction of the Secretary of State.

Department of Public Works.—This Department was constituted in 1867 and operates under the legislative authority of the Public Works Act and other Acts of Parliament. It is responsible for the management and direction of the public works of Canada and, except as specifically provided in other Acts, attends to the construction and maintenance of public buildings, wharves, piers, roads and bridges and the undertaking of dredging and navigable waters protection work. The Department maintains district offices at key points across the country. The main operating Branches of the Department with headquarters in Ottawa are: Harbours and Rivers Engineering, Building Construction, Development Engineering, Property and Building Management, and Purchasing and Stores. In addition, the Fire Prevention Branch, organized in 1919 and now a part of the Department of Public Works, maintains fire-loss records, makes inspections, reports on fire protection legislation and protection methods and endeavours to extend and co-ordinate fire prevention work in Canada. Federal interests in the Trans-Canada Highway are also handled by the Department.

The Minister of Public Works is responsible to Parliament for the Central Mortgage and Housing Corporation and for the National Capital Commission.

Department of the Secretary of State.—The Secretary of State and Registrar General of Canada is the official medium of communication with the Throne through the Governor General, and is the custodian of the Great Seal of Canada and of the Privy Seal of the Governor General. He is responsible for the preparation and tabling of returns in Parliament. He administers legislation relating to patents of invention, trade marks, industrial designs, timber marking, copyright, companies, boards of trade, the registration of trade unions, public officers, public documents and governmental and parliamentary translations. He is also the Custodian of Enemy Property.

The Secretary of State has certain responsibilities with respect to civilian decorations, precedence and ceremonial. The Committee on the use of Parliament Hill and the National War Memorial falls within his purview. He is the Minister of the Department of Public Printing and Stationery and the spokesman in Cabinet and Parliament for the Civil Service Commission and the Chief Electoral Officer.

The Tariff Board.—Constituted in 1931 under the Tariff Board Act (SC 1931, c. 55), the Board derives its duties and powers from three statutes: the Tariff Board Act (RSC 1952, c. 261, as amended); the Customs Act (RSC 1952, c. 58, as amended); and the Excise Tax Act (RSC 1952, c. 100, as amended).

Under the Tariff Board Act, the Board makes inquiry into and reports upon any matter in relation to goods that, if brought into Canada, are subject to or exempt from duties of customs or excise taxes. Reports of the Board are tabled in Parliament by the Minister of Finance. It is also the duty of the Board to hold an inquiry under Sect. 14 of the Customs Tariff and to inquire into any other matter in relation to the trade and commerce of Canada that the Governor in Council sees fit to refer to the Board for inquiry and report.

Under the provisions of the Customs Act and the Excise Tax Act, the Tariff Board acts as a court to hear appeals from rulings of the Department of National Revenue, Customs and Excise, in respect of excise taxes, tariff classification, value for duty, and drawback of customs duties. Declarations of the Board on appeals on questions of fact are final and conclusive but the Acts contain provisions for appeal, on questions of law, to the Exchequer Court of Canada.

Department of Trade and Commerce.—The Department of Trade and Commerce was established by Act of Parliament on June 23, 1887, but did not function until Dec. 5, 1892, when an Order in Council to this effect was passed. Before the formation of the Department, assistance in the development of Canada's external trade was provided by eight Canadian Commercial Agents—five in the West Indies, two in Great Britain and one in France—who served on a part-time basis and were responsible to the Minister of Finance. In 1895 a Canadian Commercial Agent was appointed at Sydney, Australia, as the first full-time salaried Agent of the Department.

The framework of the present Trade Commissioner Service emerged during the next decade or so, the Commercial Agents gradually giving place to career Trade Commissioners. There are now 145 Trade Commissioners serving at Headquarters and abroad in 59 posts (including Assistant Trade Commissioners and agricultural, fisheries and timber specialists). Where Trade Commissioners are members of a mission maintained by the Department of External Affairs they hold diplomatic status and are known as Commercial Counsellors or Commercial Secretaries.

The Department provides a wide range of services to Canadian business men. It comprises: the Canadian Trade Commissioner Service, Commodities Branch (including the Transportation and Trade Services Division), Agriculture and Fisheries Branch, International Trade Relations Branch, Trade Publicity Branch, Industrial Development Branch, Small Business Branch, Economics Branch, Energy Studies Branch, Standards Branch, Economic and Technical Assistance Branch and the Canadian Government Exhibition Commission.

The following boards, commissions, Crown corporations and agencies report to Parliament through the Minister of Trade and Commerce—seven of them through his capacity as Chairman of the Privy Council Committee on Scientific and Industrial Research: Board of Grain Commissioners, Canadian Wheat Board, Dominion Bureau of Statistics, Export Credits Insurance Corporation, Northern Ontario Pipe Line Crown Corporation, National Energy Board, Atomic Energy Control Board, Atomic Energy of Canada Limited, Canadian Patents and Development Limited, National Research Council, Eldorado Mining and Refining Company Limited, Eldorado Aviation Limited, and Northern Transportation Company Limited.

Department of Transport.—The Department was created on Nov. 2, 1936 from the former Departments of Marine and of Railways and Canals, and the Civil Aviation Branch of the Department of National Defence (RSC 1952, c. 79).

The work of the Department consists of three main Services: Marine, Air and Railways. Marine Service operations include aids to navigation, nautical and pilotage services, marine agencies, secondary canals, steamship inspection and floating equipment, and direct supervision over 300 public harbours; nine other harbours come under supervision of the Department but are administered by commissions. Air Services cover the operation of civil aviation, meteorological and telecommunication branches. The latter includes the administration and regulation of radar, radio marine and radio aeronautical aids to navigation and of communication by wire and by government telegraph and telephone.

Other services of the Department are in connection with the Government-owned companies: the Canadian National Railways, Canadian Government Railways, the Prince Edward Island, Newfoundland, and Yarmouth-Bar Harbor ferry services, and Trans-Canada Air Lines.

The Minister of Transport is responsible to Parliament for the following boards, commissions and Crown companies: the Air Transport Board; Board of Transport Commissioners; Canadian Maritime Commission; National Harbours Board; Park Steamship Company Limited; the St. Lawrence Seaway Authority; and the Canadian Overseas Telecommunication Corporation.

Department of Veterans Affairs.—This Department, established in 1944 (RSC 1952, c. 80), is concerned exclusively with the welfare of veterans and with the dependants of veterans and of those who died on active service. The Department provides treatment services (hospital, medical, dental and prosthetic), welfare services, education assistance, life insurance, and land settlement and home construction assistance. The Veterans' Bureau assists veterans in the preparation and presentation of pension claims.

The Canadian Pension Commission, established by the Pension Act (RSC 1952, c. 207), and the War Veterans Allowance Board, established by the War Veterans Allowance Act (RSC 1952, c. 340), also report to Parliament through the Minister of Veterans Affairs.

The Department has treatment institutions and facilities in a number of centres of population. It also maintains administrative offices, shared by the Canadian Pension Commission and the War Veterans Allowance Board, in large cities across Canada and in London, England.

Emergency Measures Organization.—This Organization is a section of the Privy Council Office, established in June 1957 for the purpose of co-ordinating civil emergency planning. On Sept. 1, 1959, the Departments of National Defence, Health and Welfare, and Justice became responsible for specific civil defence functions; the Emergency Measures Organization for the residue. The Organization is responsible, through the Secretary of the Cabinet, to the Prime Minister.

National Energy Board.—This Board was established under the National Energy Board Act, 1959 for the broad purpose of assuring the best use of energy resources in Canada. The Board, composed of five members, is responsible for the regulation of the construction and operation of the oil and gas pipelines that are under the jurisdiction of the Parliament of Canada, the tolls charged for transmission by oil and gas pipeline, the export and import of gas and the export of electric power, and the construction of the lines over which such power is transmitted. The Board is also required to study and keep under review all matters relating to energy under the jurisdiction of the Parliament of Canada and to recommend such measures as it considers necessary and advisable on the subject. The Board reports to Parliament through the Minister of Trade and Commerce.

Royal Canadian Mounted Police.—The Royal Canadian Mounted Police, a civil force maintained by the Federal Government, was organized in 1873 as the North West Mounted Police. It now operates under the Royal Canadian Mounted Police Act 1959 and is responsible for enforcing federal laws throughout Canada. By agreement with certain provincial governments, it is also responsible for enforcing provincial laws within those provinces and for policing many district municipalities, cities and towns. The Force is controlled and administered by the Minister of Justice.

Section 2.—Crown Corporations

The Crown corporation form of public enterprise is not a new type of organization in Canada but in recent years, as the work of government has become more complex, greater reliance has been placed on it as the appropriate instrument for administering and managing many public services in which business enterprise and public accountability must be combined.

The use of the corporate device to harmonize public responsibility in the development of economic resources and the provision of public services with the pursuit of commercial and industrial objectives has led to the adoption of many different forms and formulas of management. The most usual practice has been to set up a corporation under the provisions of a special Act of Parliament which defines its purpose and sets forth its powers and responsibilities. However, during World War II the Minister of Munitions and Supply was authorized to procure the incorporation of companies under the federal Companies Act, 1934, or under any provincial Companies Act to which he might delegate any of the powers conferred on him under the Department of Munitions and Supply Act or any Order in Council. Under this legislation about 28 companies were created to serve a wide variety of purposes; most of these companies have since been wound up.

Following the successful experience during the war years in relying on the Companies Act for the establishment of Crown companies, similar incorporating powers were granted by an amendment to the Research Council Act and have been incorporated in the Atomic Energy Control and the Defence Production Acts.

In 1946 the Government Companies Operation Act was passed to regulate the operation of companies formed under the Companies Act. However, it was applicable only to a relatively small number of companies and, in order to establish a more uniform system of financial and budgetary control and of accounting, auditing and reporting for Crown corporations generally, Part VIII of the Financial Administration Act was enacted in 1951 and brought into operation by proclamation on Oct. 1, 1952. Upon its enactment the financial provisions of the Government Companies Operation Act were repealed.

One of the more interesting features of the later legislation is the attempt that has been made to define and classify Crown corporations.* The Act defines a Crown corporation as a corporation that is ultimately accountable, through a Minister, to Parliament for the conduct of its affairs and establishes three classes of corporation: departmental, agency and proprietary.

Departmental Corporations.—A departmental corporation is defined as a Crown corporation that is a servant or agent of Her Majesty in right of Canada and is responsible for administrative, supervisory or regulatory services of a governmental nature. Ten departmental corporations are listed in Schedule B to the Act:—

Agricultural Stabilization Board (formerly Agricultural Prices Support Board)
Atomic Energy Control Board
Canadian Maritime Commission
Director of Soldier Settlement
The Director, The Veterans' Land Act
Dominion Coal Board
Fisheries Prices Support Board
National Gallery of Canada
National Research Council
Unemployment Insurance Commission.

* Not all Crown corporations are subject to the provisions of the Financial Administration Act. For example, the Canadian Wheat Board, the Bank of Canada and its subsidiary the Industrial Development Bank, because of the special nature of their functions, are excluded from operations of the Crown corporations Part of the Act and are governed by their own Acts of incorporation, as are such joint enterprises of the federal and provincial governments as the Eastern Rockies Forest Conservation Board and the Halifax Relief Commission. Though not included in the Schedules to the Financial Administration Act, certain provisions of the Act apply to the Northern Ontario Pipe Line Crown Corporation, set up on June 7, 1956 to oversee the building of a cross-country natural gas pipeline. The Canada Council was set up under the Canada Council Act (assented to Mar. 28, 1957) as a Crown corporation but has been declared not an agency of the Crown and hence is not included in the Schedules to the Financial Administration Act.

Agency Corporations.—An agency corporation is defined as a Crown corporation that is an agent of Her Majesty in right of Canada and is responsible for the management of trading or service operations on a quasi-commercial basis or for the management of procurement, construction or disposal activities on behalf of Her Majesty in right of Canada. The following agency corporations are listed in Schedule C to the Financial Administration Act or have been subsequently added to that Schedule by the Governor in Council:—

- Atomic Energy of Canada Limited
- Canadian Arsenals Limited
- Canadian Commercial Corporation
- Canadian Patents and Development Limited
- Crown Assets Disposal Corporation
- Defence Construction (1951) Limited
- National Battlefields Commission
- Northern Canada Power Commission (formerly Northwest Territories Power Commission)
- National Capital Commission (formerly Federal District Commission)
- National Harbours Board
- Park Steamship Company Limited.

Two corporations, Canadian Sugar Stabilization Corporation Limited and Commodity Prices Stabilization Corporation Limited, listed in Schedule C when the Financial Administration Act was proclaimed, have since discontinued operations and surrendered their charters. By an Order in Council of June 15, 1955, the name of the Northwest Territories Power Commission (now Northern Canada Power Commission) was deleted from Schedule D and added to Schedule C, effective Apr. 1, 1954.

Proprietary Corporations.—A proprietary corporation is defined as a Crown corporation that (1) is responsible for the management of lending or financial operations, or for the management of commercial or industrial operations involving the production of or dealing in goods and the supplying of services to the public, and (2) is ordinarily required to conduct its operations without Parliamentary appropriations. The following proprietary corporations are listed in Schedule D to the Act or have been subsequently added to that Schedule by the Governor in Council:—

- Canadian Broadcasting Corporation
- Canadian National (West Indies) Steamships Limited
- Canadian Overseas Telecommunication Corporation
- Central Mortgage and Housing Corporation
- Eldorado Aviation Limited
- Eldorado Mining and Refining Limited
- Export Credits Insurance Corporation
- Farm Credit Corporation (formerly Canadian Farm Loan Board)
- National Railways, as defined in the Canadian National-Canadian Pacific Act, 1933
- Northern Transportation Company Limited
- Polymer Corporation Limited
- The St. Lawrence Seaway Authority
- Cornwall International Bridge Company Limited (subsidiary to the St. Lawrence Seaway Authority)
- Trans-Canada Air Lines.

Departmental corporations are governed by the provisions of the Financial Administration Act that are applicable to departments generally. Agency and proprietary corporations, however, are subject to the provisions of the Crown corporations Part of the Act although, if there is any inconsistency between the provisions of that Part and those of any other Act applicable to a corporation, the Act provides that the latter prevail. There is provision in the Part for the control and regulation of such matters as corporation budgets and bank accounts, the turning over to the Receiver General of surplus money, limited loans for working-capital purposes, the awarding of contracts and the establishment of reserves, the keeping and auditing of accounts, and the preparation of financial statements and reports and their submission to Parliament through the appropriate Minister.

A further form of control is exercised by Parliament through the power to vote financial assistance. This may take different forms. For some corporations, capital may be provided by parliamentary grants, loans or advances that may subsequently be converted into capital stock or bonds; for others it may be by the issue of capital stock to be subscribed and paid for by the Government; or by the sale of bonds to either the Government or the public. A few corporations have financed all or a portion of their requirements from their own resources or earnings. Under a special financing arrangement a 15-p.c. excise tax charged on radio and television sets and their parts and accessories was allocated to the revenue of the Canadian Broadcasting Corporation, but this was discontinued under the provisions of the Broadcasting Act which came into force on Nov. 10, 1958, and since that time the Corporation has received federal financing solely by parliamentary grants.

Prior to 1952, Crown corporations did not pay corporate income taxes. However, the Income Tax Act was later amended so that, in respect of financial years commencing after Jan. 1, 1952, proprietary Crown corporations pay taxes on income earned in the same manner as any privately owned corporation. One desirable result of this amendment is that the financial statements of these Crown companies are now more comparable with those of private industry, with which in some instances they are in competition, and thus it is easier to assess the relative efficiency of their operations.

The functions of the various Crown corporations are given briefly in the following paragraphs. For a number of them, further details are included in the Chapters dealing with the subjects concerned (see Index).

Agricultural Stabilization Board.—The Board was established in 1958 (SC 1957-58, c. 22) to administer the provisions of the Agricultural Stabilization Act, which has replaced the Agricultural Prices Support Act. The Board reports to Parliament through the Minister of Agriculture.

Atomic Energy Control Board.—In December 1946, by Act of Parliament (RSC 1952, c. 11), the regulation and control of atomic energy in Canada was placed under the Atomic Energy Control Board. The Board reports to Parliament through the Chairman of the Committee of the Privy Council on Scientific and Industrial Research (at present the Minister of Trade and Commerce).

Atomic Energy of Canada Limited.—This Crown company was incorporated in February 1952 under the Atomic Energy Control Act, 1946 (RSC 1952, c. 11) to take over from the National Research Council on Apr. 1, 1952 the operation of the Chalk River project. The main functions of the company are the research into many aspects of atomic energy, the operation of atomic reactors and the extraction, processing and marketing of the by-products of the reactors. The company reports to Parliament through the Chairman of the Committee of the Privy Council on Scientific and Industrial Research (at present the Minister of Trade and Commerce).

Bank of Canada.—Legislation of 1934 (RSC 1952, c. 13) provided for the establishment of a central bank in Canada, the function of which is to regulate credit and currency, to control and protect the external value of the Canadian dollar and to stabilize the level of production, trade, prices and employment so far as may be possible within the scope of monetary action. The Bank acts as the fiscal agent of the Government of Canada, manages the public debt and has the sole right to issue notes for circulation in Canada. The Bank is managed by a Board of Directors appointed by the Government and composed of a Governor, a Deputy Governor and 12 Directors; the Deputy Minister of Finance is also a member of the Board. The Bank reports to Parliament through the Minister of Finance and is governed by its own Act of incorporation. (See footnote, p. 134.)

The Canada Council.—Established by Order in Council dated Apr. 15, 1957, this corporation of 21 members, a Director and an Associate Director operates under the terms of the Canada Council Act, assented to Mar. 28, 1957. Its functions are the encouragement of the arts, humanities and social sciences in Canada. Its work is financed from the earnings of a \$50,000,000 Endowment Fund and a \$50,000,000 University Capital Grants Fund. In the making, managing and disposing of investments under the Act, the Council has the advice of an Investment Committee of five, including the Chairman and another member of the Council. The proceedings of the Council are reported each year to Parliament through the Prime Minister.

Canadian Arsenals Limited.—This company was established under the Companies Act by Letters Patent dated Sept. 20, 1945, and is subject to the Government Companies Operation Act (RSC 1952, c. 133) and certain provisions of the Financial Administration Act (RSC 1952, c. 116). The company was set up to take over and operate Crown-owned plant and equipment.

Among the items it now manufactures are propellants and explosives, small arms, radar equipment, optical and electronic instruments, and a wide variety of ammunition and components. Its divisions, together with the location of their plants, are as follows: Dominion Arsenal Division (Quebec and Val Rose, Que.); Explosives Division (Valleyfield, Que.); Filling Division (St. Paul l'Ermite, Que.); Gun Ammunition Division (Lindsay, Ont.); Small Arms Division (Long Branch, Ont.); Instrument and Radar Division (Scarborough, Ont.). The company is responsible to Parliament through the Minister of Defence Production.

Canadian Broadcasting Corporation.—The Broadcasting Act, 1958 provides that the Canadian Broadcasting Corporation shall conduct a national broadcasting service. To fulfil this function the Corporation shall have a Board of Directors consisting of a President, a Vice President and nine other Directors appointed by the Governor in Council. The President and Vice President are full-time executives appointed for a period of seven years; the other nine Directors are appointed to hold office for periods of three years and may serve two consecutive terms.

The President is the Chief Executive of the Corporation and, with the Vice President, is responsible to the Board of Directors for the conduct of the affairs of the Corporation. Located at the Head Office are the senior officers reporting to the President and Vice President who either direct staff departments or the three operating divisions of the corporation. The Staff Departments, headed by Vice Presidents, are: Programs; Administration and Finance; Corporate Affairs; and Engineering and Operations. The Operating Divisions, headed by General Managers who participate in corporate management activities, are: Regional Network Broadcasting; French Network Broadcasting; and English Network Broadcasting. The Corporation reports to Parliament through a Minister of the Crown (at present the Minister of National Revenue).

Canadian Commercial Corporation.—This Corporation was established on May 1, 1946 by the Canadian Commercial Corporation Act (RSC 1952, c. 35). It purchases goods and commodities in Canada for the governments of other countries. It also acts as purchasing agent for international agencies such as the United Nations International Children's Emergency Fund and the United Nations Korean Reconstruction Agency. Other functions include arranging production and shipment of Canadian contributions of military stores to NATO countries. The Corporation also serves other departments of the Government of Canada. For instance it arranges for the purchase and production of supplies and services which the Department of Trade and Commerce is making available to other countries under the Colombo Plan. In carrying out its functions the Corporation works closely with the Department of Defence Production. It is responsible to Parliament through the Minister of Defence Production.

Canadian Maritime Commission.—The Commission was created in 1947 (RSC 1952, c. 38) to consider and recommend policies and measures necessary for the operation, maintenance, manning and development of a merchant marine and a ship-building and ship-repairing industry. The Commission is established as a separate Department of the Government of Canada though it reports to Parliament through the Minister of Transport.

Canadian National Railways.—The Canadian National Railway Company was incorporated (SC 1919, c. 13) to operate and manage a national system of railways, including the Canadian Northern Railway System, the Canadian Government Railways and all lines entrusted to it by Order in Council. In 1923 the Grand Trunk Railway Company of Canada was amalgamated with the Canadian National Railway Company and since 1923 a number of railway lines acquired by the Government have been entrusted to the Company for operation and management, including the Newfoundland Railway and steamship services in 1949 and the Temiscouata Railway in 1950. The Canadian National Railways Act, 1919 was repealed in 1955 and the Canadian National Railways Act (SC 1955, c. 29) substituted therefor.

The Canadian National Railway Company is controlled by a Chairman and Board of Directors appointed by the Governor in Council, who report to Parliament through the Minister of Transport.

Canadian Overseas Telecommunication Corporation.—This Crown company was created on Dec. 10, 1949 by Act of Parliament (RSC 1952, c. 42) to acquire for public operation external telecommunication assets in Canada, in keeping with the Commonwealth Telegraph Agreement signed May 11, 1948. This Agreement was designed to bring about the consolidation and strengthening of the radio and cable communication systems of the Commonwealth. The Corporation is responsible to Parliament through the Minister of Transport.

Canadian Patents and Development Limited.—Canadian Patents and Development Limited is a Crown corporation established in 1948, pursuant to authority granted in an amendment to the Research Council Act which was passed in 1946. The primary purpose of the company is to make available to industry, through licensing arrangements, new processes developed by scientific workers of the National Research Council. Its services are equally available to other Government Departments, publicly supported institutions and universities. The company also has cross-agency arrangements with similar government agencies in other Commonwealth countries. The Board of Directors is composed of representatives from the National Research Council, from Government departments and from industry and the universities. Any profits that the company

may derive from licensing arrangements are available for further research and development. The Corporation reports to Parliament through the Chairman of the Committee of the Privy Council on Scientific and Industrial Research (at present the Minister of Trade and Commerce).

Canadian Wheat Board.—The Board was incorporated in 1935 under the Canadian Wheat Board Act to market, in an orderly manner, in the interprovincial and export trade, grain grown in Canada. Its powers include authority to buy, take delivery of, store, transfer, sell, ship or otherwise dispose of grain. Except as directed by the Governor in Council, the Board was not originally authorized to buy grain other than wheat but, since Aug. 1, 1949, it may also buy oats and barley. Only grain produced in the designated area, which includes Manitoba, Saskatchewan, Alberta and parts of British Columbia and Ontario, is purchased by the Board, which controls the delivery of grain into elevators and railway cars in that area as well as the interprovincial movement and export of wheat, oats and barley generally. The Board is governed by its own Act of incorporation (see footnote, p. 134). It reports to Parliament through the Minister of Trade and Commerce.

Central Mortgage and Housing Corporation.—This Corporation was incorporated by Act of Parliament (RSC 1952, c. 46) in December 1945 to administer the National Housing Acts. Under the National Housing Act, 1954 (SC 1953-54, c. 23, as amended 1956, c. 9, and 1957-58, c. 18), the Corporation insures mortgage loans made by approved lenders for home ownership and rental housing, makes direct loans, provides home improvement and rental guarantees, undertakes jointly with provincial governments the assembly of land and the construction of housing projects, conducts housing research, encourages community planning and owns and manages rental housing units built for war workers and veterans. The Corporation also arranges for and supervises the construction of housing projects on behalf of the Department of National Defence and other Government departments and agencies. The Corporation is responsible to Parliament through the Minister of Public Works.

Crown Assets Disposal Corporation.—This Corporation is established under the Surplus Crown Assets Act (RSC 1952, c. 260) and is subject to the Financial Administration Act (RSC 1952, c. 116). In June 1944, War Assets Corporation was established by statute to replace War Assets Corporation Limited which had been incorporated in 1943. In 1949 the name of War Assets Corporation was changed to Crown Assets Disposal Corporation. The Corporation's function is to dispose of surplus Crown assets. It is responsible to Parliament through the Minister of Defence Production.

Defence Construction (1951) Limited.—This company was established by Letters Patent in 1951 to take over the general undertakings of Defence Construction Limited. The company carries out all defence construction with the exception of houses and airfield runways and is responsible to Parliament through the Minister of Defence Production.

Director of Soldier Settlement and Director of the Veterans' Land Act.—The Director of Soldier Settlement (under the Act of 1919) is also the Director of the Veterans' Land Act, and in each capacity is legally a corporation sole. For administrative purposes, however, the programs carried on under both Acts constitute integral parts of the services provided by the Department of Veterans Affairs.

Dominion Coal Board.—The Board, established as a department in 1947 by the Dominion Coal Board Act (RSC 1952, c. 86), has the responsibility of studying and recommending to the Government policies concerning the production, import, distribution and use of coal. The chairman has the status of a deputy minister and the Board reports to Parliament through the Minister of Mines and Technical Surveys. The Board administers transportation and other subventions relating to coal, including those under the Atlantic Provinces Power Development Act (SC 1957-58, c. 25). It also administers loans authorized under the Maritime Coal Production Assistance Act (RSC 1952, c. 173). The Dominion Coal Board Act makes provision for the regulation and control of the production, distribution and use of fuel in times of national emergency.

Eastern Rockies Forest Conservation Board.—The Board was appointed in 1947 under the Eastern Rocky Mountain Forest Conservation Act which authorized an agreement between the Government of Canada and the Province of Alberta relating to the protection and conservation of the forests of that area of the eastern slope of the Rocky Mountains which forms part of the watershed of the Saskatchewan River. The function of the Board is to plan, supervise and undertake construction, operation and maintenance of projects and facilities necessary for the proper protection of the forests of the area to obtain the greatest possible flow of water in the Saskatchewan River and its tributaries.

During the first seven years of the agreement, the Federal Government undertook to provide \$6,300,000 for capital expenditure and Alberta to provide funds for maintenance expenditure. During the period of capital expenditure the Federal Government agreed to appoint the chairman and one member and the province one member. After the capital period the arrangement was that the Federal Government appoint one member and that the Government of Alberta appoint two members and name one of the three as chairman. This latter arrangement became effective on Apr. 1, 1955 and the Province of Alberta is now responsible for all future capital and maintenance

costs of this area. Under a further amendment made in 1957, an undertaking by the Federal Government to share in certain forest fire fighting costs was deleted, and upon termination of the agreement all property acquired by the Board is to belong to the province. The Board reports to Parliament through the Minister of Northern Affairs and National Resources. (See footnote, p. 134.)

Eldorado Aviation Limited.—This company was incorporated Apr. 23, 1953 to carry air traffic, both passenger and freight, for Eldorado Mining and Refining Limited and its wholly owned subsidiary, Northern Transportation Company Limited. It reports to Parliament through the Chairman of the Committee of the Privy Council on Scientific and Industrial Research (at present the Minister of Trade and Commerce).

Eldorado Mining and Refining Limited.—Set up in 1944 under the name of Eldorado Mining and Refining (1944) Limited (the date was omitted from the name in June 1952), the company's business is that of mining and refining uranium ores in Canada. The company has also entered into contracts for the purchase of uranium concentrates from private producers in Canada. It reports to Parliament through the Chairman of the Committee of the Privy Council on Scientific and Industrial Research (at present the Minister of Trade and Commerce).

Export Credits Insurance Corporation.—This Corporation commenced operations in 1945 under the Export Credits Insurance Act, 1944 (RSC 1952, c. 105) and is administered by a Board of Directors (including the Deputy Minister of Trade and Commerce and the Deputy Minister of Finance) with the advice of an Advisory Council. Its function is to insure Canadian exporters against non-payment by foreign buyers arising out of credit and political risks involved in foreign trade. The Corporation reports to Parliament through the Minister of Trade and Commerce.

Farm Credit Corporation.—This Corporation was established on Oct. 5, 1959 (SC 1959, c. 43) for the purpose of providing for the extension of long-term mortgage credit to farmers. The Corporation is responsible to Parliament through the Minister of Agriculture.

Fisheries Prices Support Board.—The Board was set up in July 1947 (RSC 1952, c. 120) to recommend to the Government price support measures when severe price declines occur. The Board functions under the direction of the Minister of Fisheries and consists of a chairman, who is a senior officer of the Department of Fisheries, and five members chosen from private and co-operative firms in the industry. The Board has authority to buy fishery products and to sell or otherwise dispose of them or to pay producers the difference between a price prescribed by the Board and the average price the product actually commands.

Industrial Development Bank.—The Bank, a subsidiary of the Bank of Canada, was incorporated in 1944 to provide loans to industrial enterprises where financing is not available through recognized lending organizations. (See footnote, p. 134.)

National Battlefields Commission.—This Commission was established by Act of Parliament in 1908 to preserve the historic battlefields at Quebec City. The Commission is composed of nine members, seven being appointed by the Federal Government and one each by the Provinces of Ontario and Quebec. The Commission is supported by an annual statutory grant from the Federal Government and is responsible to Parliament through the Minister of Northern Affairs and National Resources.

National Capital Commission.—This Commission is a Crown agency created by the National Capital Act (SC 1958, c. 37), proclaimed Feb. 6, 1959. It is the lineal descendant of the Federal District Commission.

The Commission is served by a full-time paid chairman and comprises a total of twenty members representative of the ten provinces of Canada. There is a staff of officials numbering seven reporting to a general manager, and a permanent work force of about 550.

Co-ordination and development of public lands in the National Capital Region are undertaken by direct planning and construction by the Commission's staff; by co-operation with municipalities; by provision of planning aid or financial assistance in municipal projects; and by advising the Department of Public Works on the siting and appearance of all Federal Government buildings in the 1,800-sq. mile National Capital Region. The Commission reports through the Minister of Public Works.

National Gallery of Canada.—The National Gallery of Canada was founded in 1880. By Act of Parliament in 1913, re-enacted in 1951, it was placed under the management of a Board of Trustees appointed by the Governor General in Council and now operates under the National Gallery Act (RSC 1952, c. 186). It is responsible to Parliament through a Minister of the Crown (at present the Minister of Citizenship and Immigration).

The first charge of the National Gallery is the development and care of the national art collections. Other important services are the arrangement of loans and exhibitions from abroad and from its own holdings for showing in Canada and abroad, the promotion of good industrial design and general extension work consisting of the distribution of reproductions for educational purposes, lectures, educational tours, publications, school broadcasts and art films.

National Harbours Board.—The Board was established by Act of Parliament in 1936. It is responsible for the administration of port facilities at Halifax, Saint John, Chicoutimi, Quebec, Trois Rivières, Montreal, Vancouver and Churchill, the Jacques Cartier and Champlain bridges at Montreal Harbour, and the government grain elevators at Prescott and Port Colborne, Ont. The Board is responsible to Parliament through the Minister of Transport.

National Research Council.—In 1917 the Research Council Act was passed and in 1928 laboratories for scientific research were established at Ottawa. The National Research Council now has Divisions of Pure and Applied Chemistry, Building Research, Mechanical Engineering, the National Aeronautical Establishment, Radio and Electrical Engineering, Pure and Applied Physics, Applied Biology and Medical Research. Regional laboratories have been established at Saskatoon, Sask., and Halifax, N.S.

Patentable processes and improvements developed by the Council are made available under licence to industry through a Crown company, Canadian Patents and Development Limited, and any profits from the licensing arrangements are used for further research and development.

The National Research Council reports to Parliament through the Chairman of the Committee of the Privy Council on Scientific and Industrial Research (at present the Minister of Trade and Commerce).

Northern Canada Power Commission.—The Commission was established by Act of Parliament in 1948 to bring electric power to points in the Northwest Territories where a need developed and where power could be provided on a self-sustaining basis. The Act was amended in 1950 to give authority to the Commission to provide similar services in Yukon Territory; the name of the Commission, formerly Northwest Territories Power Commission, was changed in 1956. The Commission is composed of a chairman and two members appointed by the Governor in Council. It operates hydro-electric plants on the Snare River in the Northwest Territories and on the Yukon River (near Whitehorse) and the Mayo River in Yukon Territory. An additional hydro plant is under construction on the Snare River 10 miles downstream from the Snare Rapids plant. The Commission operates diesel-electric plants at Fort Smith, Fort Simpson, Yellowknife and Inuvik, N.W.T., and at Field, B.C.; a small diesel plant for the school and hostel at Fort McPherson, N.W.T., and a Department of Transport diesel-electric plant at Frobisher Bay, N.W.T.

The Minister of Northern Affairs and National Resources reports to Parliament for the Commission.

Northern Transportation Company Limited.—This Company was incorporated in 1947 under the title of Northern Transportation Company (1947) Limited, the date being omitted from the name in 1952. Previously a company chartered under an Alberta statute, it has been a wholly owned subsidiary of Eldorado Mining and Refining Limited since that Crown company was established and carries out the business of a common carrier in the Mackenzie River watershed. The Company is responsible to Parliament through the Chairman of the Committee of the Privy Council on Scientific and Industrial Research (at present the Minister of Trade and Commerce).

Northern Ontario Pipe Line Crown Corporation.—This Corporation was established by the Northern Ontario Pipe Line Crown Corporation Act (SC 1956, c. 10) for the purpose of constructing the northern Ontario section of the all-Canadian natural gas pipeline and of leasing, with an option to purchase, this section to Trans-Canada Pipe Lines Limited. In addition, the Corporation was authorized to make short-term loans to Trans-Canada Pipe Lines Limited for the construction of the western section of the pipeline. The Corporation is responsible to Parliament through the Minister of Trade and Commerce.

Pipeline installation on the northern Ontario section, which extends from the Manitoba-Ontario border to the vicinity of Kapuskasing, Ont., was completed on Oct. 22, 1958.

Park Steamship Company Limited.—After World War II this Company acted as an agent for Crown Assets Disposal Corporation in the sale and delivery to purchasers of Government war-built ships. This work is completed but the Company remains available to carry out any appropriate duties. It has no staff of its own, any necessary work being done by the staff of the Canadian Maritime Commission (see p. 137). The Company reports to Parliament through the Minister of Transport.

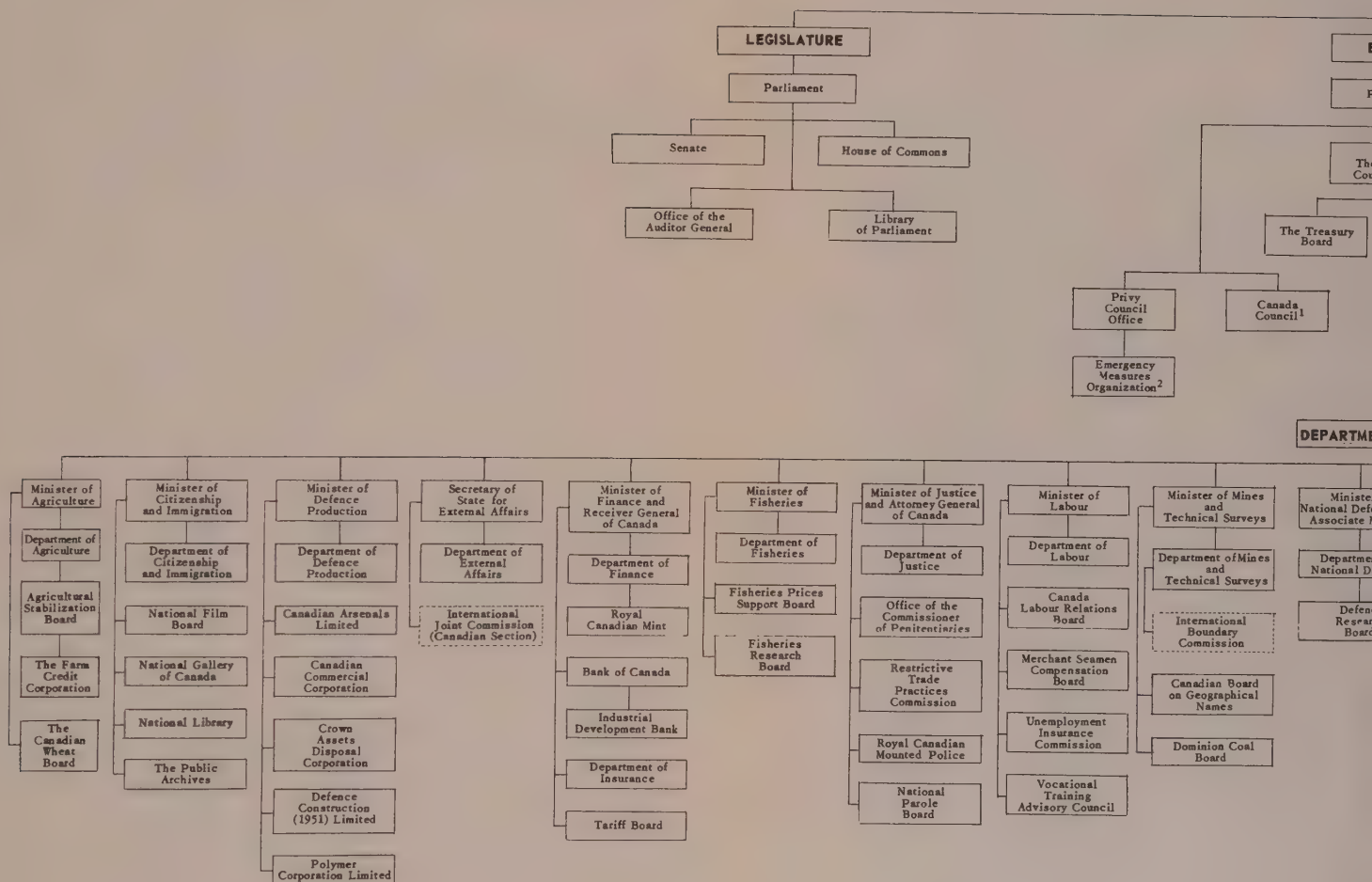
Polymer Corporation Limited.—This Corporation was established in 1942 by Letters Patent under the Companies Act and is subject to the Government Companies Operation Act (RSC 1952, c. 133) and the Financial Administration Act (RSC 1952, c. 116). It was set up to construct and operate a synthetic rubber plant which now produces a variety of synthetic rubber products and some chemicals. The plant is located at Sarnia, Ont. The Corporation is responsible to Parliament through the Minister of Defence Production.

St. Lawrence Seaway Authority.—The St. Lawrence Seaway Authority was established by Act of Parliament in 1951 (RSC 1952, c. 242) and came into force by proclamation on July 1, 1954. The Authority is incorporated for the purposes of constructing, maintaining and operating all such works as may be necessary to provide and maintain, either wholly in Canada or in conjunction with works undertaken by an appropriate authority in the United States, a deep waterway between the Port of Montreal and Lake Erie. The Authority is composed of a President, a Vice-President and a Member and reports to Parliament through the Minister of Transport.

THE GOVERNMENT

THE GOVERNMENT

THE GOVERNMENT



Note: Lines of responsibility are often inconclusive, since certain semi-independent agencies, though each responsible to a Minister of the Crown, are administered as departmental branches.

GOVERNMENT OF CANADA

SOVEREIGN

GOVERNOR GENERAL

Office of the Secretary
to the Governor General

EXECUTIVE

Minister

Cabinet
Queen's Privy
for Canada

JUDICIARY

Supreme Court
of Canada

Exchequer Court
of Canada

Chairman of the Committee
of the Privy Council on
Scientific and Industrial Research

National
Research
Council

Canadian Patents and
Development Limited

Eldorado Mining
and Refining
Company Limited

Northern Transporta-
tion Company Limited

Eldorado Aviation
Limited

Atomic Energy
of Canada
Limited

Atomic
Energy
Control Board

DEPARTMENTS AND AGENCIES

Minister of
National Health
and Welfare

Department of
National Health
and Welfare

Minister of
National Revenue

Department of
National Revenue

Board of
Broadcast
Governors

Canadian Broad-
casting Corporation

Tax Appeal Board

Minister of Northern
Affairs and
National
Resources

Department of
Northern Affairs
and National
Resources

Commissioner of
the Northwest
Territories

Commissioner of
the Yukon
Territory

Eastern Rockies
Forest
Conservation
Board

Historic Sites
and
Monuments Board

National
Battlefields
Commission

Northern Canada
Power
Commission

Postmaster
General

Post Office
Department

Minister of
Public Works

Department of
Public Works

Central Mortgage
and Housing
Corporation

National
Capital
Commission

Secretary of State
and Registrar
General of Canada

Department of
the Secretary of
State of Canada

Office of
the Custodian

Office of the
Chief Electoral
Officer of Canada

Civil Service
Commission

Department of
Public Printing
and Stationery

War Claims
Commission

Solicitor
General

Minister of Trade
and Commerce

Department of
Trade
and Commerce

Dominion Bureau
of Statistics

Export Credits
Insurance
Corporation

Board of Grain
Commissioners

National Energy
Board

Northern Ontario
Pipe Line
Crown
Corporation

Minister of
Transport

Department of
Transport

Air Transport Board

Canadian Maritime
Commission

Canadian
National
Railways

Canadian National
(West Indies)
Steamships Limited

Canadian Overseas
Telecommunication
Corporation

National Harbours
Board

The St. Lawrence
Seaway
Authority

Board of Transport
Commissioners for
Canada

Trans-Canada
Air Lines

Park Steamship
Company
Limited

Minister of
Veterans
Affairs

Department of
Veterans
Affairs

Canadian
Pension
Commission

War Veterans
Allowance
Board

1. Not an Agent of the Crown but reports to Parliament through the Prime Minister.
2. Responsible, through the Secretary to the Cabinet, to the Prime Minister for the co-ordination of civil emergency planning, including civil defence. On September 1, 1959, the Departments of National Defence, Health and Welfare and Justice became responsible for specific civil defence functions; the Emergency Measures Organization for the residue.

Trans-Canada Air Lines.—TCA came into being by Act of Parliament in 1937 (RSC 1952, c. 268) to provide for the development of a publicly owned scheduled transcontinental air service. Transatlantic air services were inaugurated by TCA on behalf of the Canadian Government during World War II and scheduled operations were commenced at the end of the war. TCA now maintains passenger, mail and commodity traffic services over nationwide routes and also services to the United States, England, Scotland, Ireland, France, Belgium, Switzerland, West Germany, Austria, Bermuda, the Bahamas, Jamaica, Antigua, Barbados and Trinidad. TCA is responsible to Parliament through the Minister of Transport.

Unemployment Insurance Commission.—The Commission was appointed on Sept. 24, 1940 under the provisions of the Unemployment Insurance Act, 1940 (RSC 1952, c. 273) for the purpose of administering the Act and providing a National Employment Service. It is composed of three Commissioners appointed by the Governor in Council, of whom one is designated Chief Commissioner. One Commissioner, other than the Chief Commissioner, is appointed after consultation with organizations representative of workers and the other after consultation with organizations representative of employers. The Chief Commissioner is appointed to hold office for a period of ten years and each of the other Commissioners to hold office for a period not exceeding ten years. The Commission is responsible to Parliament through the Minister of Labour.

Section 3.—Acts Administered by Federal Departments*

List of the Principal Acts of Parliament Administered by Departments of the Government of Canada

NOTE.—Copies of individual Acts of Parliament and amendments may be obtained from the Queen's Printer, Ottawa, at prices of from 10 cents to \$1.50 per copy according to number of pages. Where duplications of certain Acts appear in the list, parts of these Acts are administered under the Departments given.

Department, Year and Chapter of Statute	Name of Act	Department, Year and Chapter of Statute	Name of Act
Agriculture— RSC 1952	4 Agricultural Products Board	Citizenship and Immigration—	
5	Agricultural Products Co-operative Marketing	1924 48	Indian Reserve Lands in Ontario
6	Agricultural Products Marketing	1927 37	St. Regis Indian Reservation
9	Animal Contagious Diseases	1934 29	Caughnawaga Indian Reserve
22, 305	Canada Dairy Products	1943 19	British Columbia Indian Reserves
47	Cheese and Cheese Factory Im- provement	RSC 1952 33	Mineral Resources
52, 313	Cold Storage	67	Canadian Citizenship
66	Department of Agriculture		Department of Citizenship and Immigration
81	Destructive Insect and Pest	146	Immigration Aid Societies
101	Experimental Farm Stations	149	Indian
113	Feeding Stuffs	325	Immigration
115	Fertilizers	Civil Service Commission—	
126	Fruit, Vegetables and Honey	RSC 1952 48	Civil Service
141	Hay and Straw Inspection		
155	Inspection and Sale	Defence Production—	
167	Live Stock and Live Stock Pro- ducts	RSC 1952 35	Canadian Commercial Corporation
168	Live Stock Pedigree	62	Defence Production
172	Maple Products Industry	260	Surplus Crown Assets
175	Maritime Marshland Rehabilita- tion	External Affairs—	
177	Meat and Canned Foods	1911 28	Respecting the International Boundary Waters Treaty and the existence of the International Joint Commission (amended 1914, c. 5, and 1922, c. 43)
180	Milk Test		
209	Pest Control Products	1948 71	Carrying into effect the Treaties of Peace between Canada and Italy, Romania, Hungary and Finland
213	Prairie Farm Assistance		
214	Prairie Farm Rehabilitation	RSC 1952 50	Carrying into effect the Treaty of Peace between Canada and Japan
248	Seeds		
294	Wheat Co-operative Marketing	68	Department of External Affairs
1953-54 51	Criminal Code, Sect. 178, Race Track Betting	122	Food and Agriculture Organization of the United Nations
1955 27	Canada Agricultural Products Standards		
36	Meat Inspection		
1957-58 22	Agricultural Stabilization		
1959 43	Farm Credit		
Auditor General— RSC 1952 116	Financial Administration		

* Compiled from information supplied by the respective Departments.

List of the Principal Acts of Parliament Administered by Departments of the Government of Canada—continued

Department, Year and Chapter of Statute	Name of Act	Department, Year and Chapter of Statute	Name of Act
External Affairs— concluded RSC 1952		Insurance— RSC 1952	
142	High Commissioner of the United Kingdom	31	Canadian and British Insurance Companies
218	Privileges and Immunities (NATO)	49	Civil Service Insurance
219	Privileges and Immunities (United Nations)	70	Department of Insurance
275	United Nations	100	Excise Tax (Part I)
1953-54 54	Diplomatic Immunities (Commonwealth Countries)	125	Foreign Insurance Companies
		170	Loan Companies
		251	Small Loans
		272	Trust Companies
		296	Winding-up (Part III)
		1952-53 28	Co-operative Credit Associations
Finance—			
	Appropriation (Annual)		
	Canadian National Railways Financing and Guarantee (Annual)		
RSC 1952	12 Bank	Justice—	
13	Bank of Canada	1940 43	Treachery
15	Bills of Exchange	RSC 1952 1	Admiralty
19	Bretton Woods Agreements	14	Bankruptcy
82	Diplomatic Service (Special) Superannuation	28	Canada Prize
110	Farm Improvement Loans	71	Department of Justice
116	Financial Administration	98	Exchequer Court
131	Gold Export	106	Expropriation
151, 326	Industrial Development Bank	111	Farmers' Creditors Arrangement
156	Interest	116	Financial Administration
182	Municipal Grants	127	Fugitive Offenders
183	Municipal Improvements Assistance	144	Identification of Criminals
204	Pawnbrokers	154	Inquiries
221	Provincial Subsidies	158	Interpretation
232	Quebec Savings Banks	159	Judges
245	Satisfied Securities	160	Juvenile Delinquents
261, 336	Tariff Board	171	Lord's Day
278	Veterans Business and Professional Loans	198	Official Secrets
296	Winding-up	206	Penitentiary
315	Currency, Mint and Exchange Fund	210	Petition of Right
1952-53 47	Public Service Superannuation	217, 333	Prisons and Reformatories
1953-54 28	Fire Losses Replacement Account	234	Railway
1955 31	Canadian National Railways Re-funding	253	Solicitor General
		286	Tobacco Restraint
		259, 335	Supreme Court
		299	Yukon Administration of Justice
		307	Canada Evidence
1956 1	Fisheries Improvement Loans	314	Combines Investigation
	Prairie Grain Producers Interim Financing	322	Extradition
2	Temporary Wheat Reserves	1952-53 530	Crown Liability
29	Federal-Provincial Tax Sharing Arrangements	1953-54 51	Criminal Code
		1958 38	Parole
1957-58 26	Beechwood Power Project	1959 34	Royal Canadian Mounted Police
1959 32	Public Service Pension Adjustment		Superannuation
		54	Royal Canadian Mounted Police
Fisheries—			
RSC 1952		Labour—	
61	Deep Sea Fisheries	RSC 1927 110	Conciliation and Labour
69	Department of Fisheries	RSC 1952 72	Department of Labour
118	Fish Inspection	108	Fair Wages and Hours of Labour
119	Fisheries	132	Government Annuities
120	Fisheries Prices Support	134	Government Employees Compensation
121	Fisheries Research Board	152	Industrial Relations and Disputes
177	Meat and Canned Foods	178	Investigation
194	Northern Pacific Halibut Fishery (Convention)	236	Merchant Seamen Compensation
244	Salt Fish Board		Reinstatement in Civil Employment
293	Whaling Convention	286	Vocational Training Co-ordination
1952-53 15	Coastal Fisheries Protection	295	White Phosphorous Matches
44	North Pacific Fisheries Convention	1952-53 19	Canada Fair Employment Practices
1953-54 18	Northwest Atlantic Fisheries Convention		
1955 34	Great Lakes Fisheries Convention	1955 50	Unemployment Insurance
1957 11	Pacific Salmon Fisheries Convention	1956 38	Female Employees Equal Pay
31	The Pacific Fur Seals Convention	1957-58 24	Annual Vacations

List of the Principal Acts of Parliament Administered by Departments of the Government of Canada—continued

Department, Year and Chapter of Statute	Name of Act	Department, Year and Chapter of Statute	Name of Act
Mines and Technical Surveys—		National Revenue—	
RSC 1951 26	Canada Lands Survey	<i>Taxation—concl.</i>	
RSC 1952 73	Department of Mines and Technical Surveys	1951 42	Canada-Sweden Income Tax Agreement
95, 318	Emergency Gold Mining Assistance	RSC 1952 89	Dominion Succession Duty
102	Explosives	1957 22	Estate Tax
		1958 29	
		RSC 1952 148	
		1953 40	
		1954 57	
National Defence—		1955 54	Income Tax
RSC 1952 63	Defence Services Pension	55	
184	National Defence	1956 39	
283	Visiting Forces (British Commonwealth)	1957 29	
284	Visiting Forces (North Atlantic Treaty)	1958 32	
		1955 10	Canada - Ireland Income Tax Agreement
1959 21	Canadian Forces Superannuation	11	Canada - Ireland Succession Duties Agreement
		1956 5	Canada - Denmark Income Tax Agreement
National Health and Welfare—		33	Canada - Germany Income Tax Agreement
RSC 1952 74	Department of National Health and Welfare	1957 16	Canada-Netherlands Income Tax Agreement
<i>National Health—</i>		17	Canada - South Africa Death Duties Agreement
RSC 1952 29	Canada Shipping (Part V, Sick Mariners and Marine Hospitals)	18	Canada - South Africa Income Tax Agreement
165	Leprosy	1957-58 27	Canada - Australia Income Tax Agreement
201	Opium and Narcotic Drug	1958 12	Canada-Belgian Congo Income Tax Agreement
220	Proprietary or Patent Medicine	13	Canada - Belgium Income Tax Agreement
229	Public Works Health	1959 20	Canada - Finland Income Tax Agreement
231	Quarantine		
1952-53 38	Food and Drugs		
1957 28	Hospital Insurance and Diagnostic Services		
<i>Welfare—</i>		<i>Customs and Excise—</i>	
RSC 1952 17	Blind Persons	RSC 1952 58	Customs
109	Family Allowances	60	Customs Tariff (amended by 316)
199	Old Age Assistance	75	Department of National Revenue
200	Old Age Security	99	Excise (amended by 319)
1953-54 55	Disabled Persons	100	Excise Tax (amended by 320)
1956 26	Unemployment Assistance		
National Library—		<i>Administered in Part—</i>	
RSC 1952 330	National Library	RSC 1925 54	United States Treaty (smuggling)
National Revenue—		1952 2	Aeronautics (amended by 302)
<i>Taxation—</i>		9	Animal Contagious Diseases
1940 32		11	Atomic Energy Control
1941 15		22	Canada Dairy Products (amended by 305)
1942 26	Excess Profits Tax	29	Canada Shipping
1943 13		30	Canada Temperance
1944 38		44	Canadian Wheat Board
1945 19		55	Copyright
1944 21		59	Customs and Fisheries Protection
1950 27	Canada-U.S. Tax Convention (Income Tax)	81	Destructive Insect and Pest
1956 35		102	Explosives
1945 31	Canada-U.S. Tax Convention (Succession Duties)	103	Export
1950 27		113	Feeding Stuffs
1946 38	Canada-U.K. Income Tax Agreement	114	Ferries
		115	Fertilizers
		118	Fish Inspection
		119	Fisheries
		123	Food and Drugs
		126	Fruit, Vegetables and Honey
		128	Game Export
		131	Gold Export
		135	Government Harbours and Piers
1948 34	Canada-U.K. Succession Duty Agreement		
1948 34	Canada-N.Z. Income Tax Agreement		
1951 40	Canada-France Income Tax Convention		
1952 18			
1951 41	Canada-France Succession Duty Convention		

List of the Principal Acts of Parliament Administered by Departments of the Government of Canada—continued

Department, Year and Chapter of Statute	Name of Act	Department, Year and Chapter of Statute	Name of Act
National Revenue— Administered in Part—concl.		Northern Affairs and National Resources—concl.	
RSC 1952 145	Immigration (amended by 325)	331	Northwest Territories
147	Importation of Intoxicating Liquors	1952-53 21	Canada Water Conservation As- sistance
155	Inspection and Sale	39	Historic Sites and Monuments
167	Live Stock and Live Stock Pro- ducts	53	Yukon
168	Live Stock Pedigree	1953-54 4	Department of Northern Affairs and National Resources
169	Live Stock Shipping	1955 47	International River Improvements
172	Maple Products Industry	1957-58 25	Atlantic Provinces Power Develop- ment
177	Meat and Canned Foods		
187	National Harbours Board		
193	Navigable Waters Protection	Post Office—	
194	Northern Pacific Halibut Fishery (Convention)	RSC 1952 212	Post Office
201	Opium and Narcotic Drug		
205	Pelagic Sealing (Provisional Agreement)	Public Archives—	
209	Pest Control Products	RSC 1952 222	Public Archives
212	Post Office		
215	Precious Metals Marking	Public Printing and Stationery—	
220	Proprietary or Patent Medicine	RSC 1952 226	Public Printing and Stationery
231	Quarantine	230	Publication of Statutes
233	Radio		
248	Seeds	Public Works—	
271	Transport	RSC 1952 91	Dry Docks Subsidies
292	Weights and Measures	106	Expropriation
295	White Phosphorous Matches	114	Ferries
1953-54 27	Export and Import Permits	138	Government Works Tolls
51	Criminal Code	193	Navigable Waters Protection, Part I
		216	Prime Minister's Residence
		228	Public Works
		269	Trans-Canada Highway
		324	Government Property Traffic
Northern Affairs and National Resources—		Secretary of State—	
1908 57, 58	National Battlefields at Quebec	RSC 1929 55	Reparation Payment
1927 51	Respecting certain debts due the Crown	1947 24	Trading with the Enemy (Transi- tional Powers)
RSC 1927 87	Seed Grain	1948 71	Italy, Romania, Hungary and Finland Treaties of Peace
88	Seed Grain Sureties		
116	Railway Belt	RSC 1952 18	Boards of Trade
124	Manitoba Supplementary Provis- ions	23, 306	Canada Elections
180	Saskatchewan and Alberta Roads	30	Canada Temperance
211	Railway Belt Water	53	Companies
1928 32	Lac Seul Conservation	54	Companies Creditors Arrangement
1930 3	Alberta Natural Resources	55	Copyright
29	Manitoba Natural Resources	62	Defence Production
37	Railway Belt and Peace River Block	77	Department of State
41	Saskatchewan Natural Resources	83	Disfranchising
1932 35	Refunds (Natural Resources)	87	Dominion Controverted Elections
55	Waterton - Glacier International Peace Park	149	Indian
1939 33	Rainy Lake Watershed Emergency Control	195	Northwest Territories
1947 59	Eastern Rocky Mountain Forest Conservation	203	Patent
RSC 1952 24	Canada Forestry	208	Pension Fund Societies
90	Dominion Water Power	223	Public Documents
128	Game Export	225	Public Officers
162	Land Titles	234	Railway
179	Migratory Birds Convention	235	Regulations
189	National Parks	247	Seals
192	National Wild Life Week	263	Territorial Lands
196	Northern Canada Power Com- mission	265	Timber Marking
224	Public Lands Grants	267	Trade Unions
263	Territorial Lands	270	Translation Bureau
300	Yukon Placer Mining	295	White Phosphorous Matches
301	Yukon Quartz Mining	298	Yukon
		307	Canada Evidence
		1952-53 49	Trade Marks and Unfair Com- petition

List of the Principal Acts of Parliament Administered by Departments of the Government of Canada—concluded

Department, Year and Chapter of Statute	Name of Act	Department, Year and Chapter of Statute	Name of Act
Trade and Commerce— RSC 1952	11 Atomic Energy Control	Transport—concl.	16 Bills of Lading
25 Canada Grain	44 Canadian Wheat Board	20 Bridges	29 Canada Shipping
78 Department of Trade and Commerce	92 Electrical and Photometric Units	34 Belleville Harbour Commissioners	38 Canadian Maritime Commission
94 Electricity Inspection	103 Export	39 Canadian National — Canadian Pacific	42 Canadian Overseas Telecommunication Corporation
105 Export Credits Insurance	129 Gas Inspection	45 Carriage by Air	79 Department of Transport
140 Grain Futures	133 Inland Water Freight Rates	135 Government Harbours and Piers	136 Government Railways
164 Length and Mass Units	191 National Trade Mark and True Labelling	137 Government Vessels Discipline	157 International Rapids Power Development
215 Precious Metals Marking	239 Research Council	168 Live Stock Shipping	174 Maritime Freight Rates
257 Statistics	292 Weights and Measures	187 National Harbours Board	193 Navigable Waters Protection
1953-54 27 Export and Import Permits	1955 14 Exportation of Power and Fluids and Importation of Gas	202 Passenger Tickets	211 Pipe Lines
1956 1 Prairie Grain Producers Interim Financing	2 2 Temporary Wheat Reserves	233 Radio	234 Railway
10 Northern Ontario Pipe Line Crown Corporation	2 2 Prairie Grain Advance Payments	242 St. Lawrence Seaway Authority	262 Telegraphs
1957-58 2 National Energy Board	1959 46	268 Trans-Canada Air Lines	271 Transport (Board of Transport Commissioners)
Transport—	Auditors for National Railways (Annual)	276 United States Wreckers	291 Water Carriage of Goods
Canadian National Railways Financing and Guarantee (Annual)	1907 22 Intercolonial Railway and Prince Edward Island Railway Employees Provident Fund	311 Canadian National Railways Capital Revision	29 Canadian National Railways
1911 26 Toronto Harbour Commissioners	1912 55 Winnipeg and St. Boniface Harbour Commissioners	31 Canadian National Refunding	
98 Hamilton Harbour Commissioners	1913 158 New Westminster Harbour Commissioners	Veterans Affairs—	
162 North Fraser Harbour Commissioners	29 Canadian National (West Indies) Steamship Company	1920 54 Returned Soldiers' Insurance (as amended)	
RSC 1927 211 Railway Belt Water	1929 4 Canadian National Railways Pensions	RSC 1927 188 Soldier Settlement (as amended)	
11 Canadian National Refunding	12 Canadian National Montreal Terminals	RSC 1952 8 Allied Veterans Benefits	
48 Northern Alberta Railways	1931 19, 20 Beauharnois Light, Heat and Power	51, 312 Civilian War Pensions and Allowances	
40 New Westminster Harbour Loan	1940 20 Beauharnois Light, Heat and Power	80 Department of Veterans Affairs	
1947 26 Beauharnois Light, Heat and Power	42 Port Alberni Harbour Commissioners	117 Fire Fighters War Service Benefits	
1948 10 New Westminster Harbour Commissioners Refunding	1950 1 Maintenance of Railway Operation Aeronautics	207, 332 Pension (amended 1953-54, c. 62; 1957-58, c. 19) (Canadian Pension Commission)	
RSC 1952 2, 302		256 Special Operators War Service Benefits	
		258 Supervisors War Service Benefits	
		279, 338 Veterans Insurance (amended 1958, c. 43)	
		280 Veterans' Land (amended 1953-54, c. 66; 1959, c. 37)	
		281 Veterans Rehabilitation (amended 1959, c. 17)	
		289 War Service Grants (amended 1953-54, c. 46; 1959, c. 18)	
		297 Women's Royal Naval Services and the South African Military Nursing Service (Benefits)	
		340 War Veterans Allowance (amended 1955, c. 13; 1957-58, c. 7) (War Veterans Allowance Board)	
		1952-53 27 Children of War Dead (Education Assistance) (amended 1953-54, c. 2; 1958, c. 25)	
		1953-54 65 Veterans Benefit (amended 1955, c. 43)	

PART IV.—FEDERAL GOVERNMENT EMPLOYMENT

The Civil Service Commission.—The Federal Civil Service comprises, in the widest sense, all servants of the Crown—other than those holding political or judicial office—who are employed in a civil capacity and whose remuneration is paid wholly and directly from moneys voted by Parliament. Collectively they form the staffs of the various departments, commissions, boards, bureaus and other agencies of the Federal Government. Nearly every category of occupation is represented in the Civil Service. A few civil servants are appointed by one or both Houses of Parliament directly and a considerable number are appointed by departments and other agencies in accordance with the provisions of certain statutes, generally with executive approval of the Governor in Council. The remainder, by far the majority, are selected and appointed by the Civil Service Commission of Canada.

The Civil Service Commission as the central personnel agency of the Federal Government is the custodian of the merit principle in respect of both initial appointments and promotions. The steps by which the Commission came to be established in its present form constitute the record of Civil Service reform in Canada which began a year after Confederation and culminated in the passing of the Civil Service Act of 1918.

Recruitment.—The recruitment of civil servants is conducted by means of open competitive examination through which every citizen has the right to compete for positions in the service of his country. Examinations are held periodically as the staff requirements of the public service dictate. Any Canadian citizen may apply for headquarters positions open at Ottawa but applicants for local positions must normally be residents of the locality in which the vacancy occurs. Competitive examinations are announced through the press and through posters displayed on the public notice boards of post offices, offices of the National Employment Service, offices of the Civil Service Commission, and elsewhere. The examinations may be written, oral, a demonstration of skill, or any combination of these.

The names of persons successful in Civil Service examinations, arranged in order of rank, are recorded on eligible lists. Examination results are formally announced by publication in the *Canada Gazette* and each candidate—successful or unsuccessful—is advised of his standing. Appointments are made as required from the eligible lists which usually remain valid for one year.

The rank of the various successful candidates on eligible lists is influenced by the 'veterans' preference'. Actually the preference is limited largely, in accordance with its definition by law, to members of the Armed Forces who have served overseas in World War I or II or in the Korean theatre of operations. The highest order of preference is the 'disability preference' accorded to pensioners of the Armed Forces who as a result of their war service have been unable to resume their prewar civilian occupations.

In recent years the Civil Service Commission has decentralized its operations and now has ten district offices and six sub-offices across the country. The Commission is granting an increasing measure of autonomy and responsibility to these offices to permit more efficient service to field agencies.

Staff Training.—In 1947 the Commission set up a Staff Training Division to promote and guide a systematic service-wide training scheme. The training scheme, sponsored by the Commission, is a joint venture undertaken in co-operation with Federal Government departments, most of which have parallel training divisions. The Commission's Training Division is primarily a co-ordinating agency. It promotes and organizes activities, trains departmental instructors in the presentation of courses, prepares and on occasion gives

courses of general application to all departments, publishes booklets and other training aids, assists departments in developing training to meet specialized needs, and acts as a general clearing-house for the exchange of information on training matters.

Promotion.—It is a prime objective of the Civil Service Act to create a career service. The result is that promotion, like entrance to the Service, is based on merit and a sound promotion system in operation. The present procedure involves the consideration of three factors: efficiency of candidates in their present positions, fitness for the vacant positions, and seniority or length of service. Appeal machinery under Commission jurisdiction has been set up for those employees who feel that their qualifications have not been properly assessed.

Position Classification and Compensation.—Provision is made in the Civil Service Act for the classifying of positions in the public service. A system of position classification was instituted in 1919 and positions with like duties and responsibilities were classified alike and remunerated equally. Each position has a title, a set of tasks or duties which are proper to it in the organization in which it occurs and, arising out of these duties, a set of qualifications appropriate for their performance. Positions with duties of similar kind are grouped together under a common title to form a class, and grades within the class reflect the level of responsibility.

The determination of rates of compensation for each class is a continuing responsibility of the Commission and salary and wage surveys are conducted constantly through its Pay Research Bureau, which compiles objective and current information concerning levels of pay within and without the Public Service for the use not only of the Commission but also of the Government and the employees concerned. Position classification is a main-spring in the Commission's primary function of recruitment, involving the fixing of standards of qualification for each class of position.

Organization and Methods.—In recent years there has been an increasing awareness of the extent to which economical administration depends on the adoption of modern management techniques and devices. In 1948 the Commission set up an Organization and Methods Service to study problems of management in collaboration with officials directly responsible for major areas of administration. This Service affords practical assistance to departments and other agencies of the Government through the systematic examination of structure, operations, procedures and work methods. Its growing facilities are offered free of charge to all departments.

Statistics of Federal Government Employment.*—The current monthly survey of Federal Government employment, started in 1952, is intended to cover all employees of the Government of Canada; employees in this sense exclude the Governor General and Lieutenant-Governors, Ministers of the Crown and Members of Parliament, judges, persons under contract and members of the Armed Forces, but include Force members of the Royal Canadian Mounted Police. This survey is much more inclusive than the previous statistical series entitled "Civil Service of Canada" and comparisons between the two sets of figures should be made only after very careful study.

The survey is divided into two main portions: (1) departmental branches, services and corporations, and (2) agency and proprietary corporations and other agencies.

Departmental Branches, Services and Corporations.—Employees in this group are covered in Tables 1 to 4; their salaries are paid from the Consolidated Revenue Fund. Definitions of classifications are as follows. "Salaried" employees include all persons paid

* Prepared in the Public Finance and Transportation Division, Dominion Bureau of Statistics.

on the basis of an annual salary rate with the exception of ships' officers who, though paid an annual salary rate, are subject to special treatment under the regulations made pertaining to the Financial Administration Act. The salaried staff are employed in departmental branches, services and corporations which are subject to regulation by the Treasury Board and for which the positions are outlined in detail in the Estimates of Canada, or are established by means of supplementary Treasury Board Minutes. Thus this group of employees includes persons who are subject to the provisions of the Civil Service Act plus salaried persons employed on the staffs of Cabinet Ministers and appointed by statute or by Order in Council, and also the salaried staffs of certain administrative branches of the Government that do not fall under the jurisdiction of the Civil Service Act.

"Prevailing Rate" employees are those who occupy continuing positions that are subject to prevailing rate legislation and are therefore paid on the basis of the going salary for similar work in the area in which the individual is employed. Regulations made under authority of the Financial Administration Act govern the third group entitled "Ships' Officers and Crews".

These three groups comprise what may be called the "regular" employees of the government service. "Casuals and Others" are persons employed on a non-continuing basis.

1.—Employees in Departmental Branches, Services and Corporations of the Federal Government, at End of Each Month, Years Ended Mar. 31, 1958 and 1959

NOTE.—Includes departments, boards, commissions, etc., listed in Tables 3 and 4 but excludes agency and proprietary corporations and other agencies, figures for which are given in Table 5.

Fiscal Year and Month	Salaried	Prevailing Rate	Ships' Officers and Crews	Total	Casuals and Others
	No.	No.	No.	No.	No.
1957-58—					
April.....	148,404	24,580	2,435	175,419	10,741
May.....	149,670	25,821	2,523	178,014	12,218
June.....	149,519	28,623	2,601	180,743	12,141
July.....	..	29,006	2,784	..	13,449
August.....	..	27,745	2,761	..	13,568
September.....	150,096	25,734	2,604	178,434	12,058 ^r
October.....	151,491	24,818	2,636	178,945	12,796
November.....	151,758	24,904	2,547	179,209	12,338
December.....	151,949	24,249	2,375	178,573	12,507
January.....	152,771	24,218	2,187	179,176	13,769
February.....	153,276	24,315	2,126	179,717	13,764
March.....	153,759	24,520	2,274	180,553	14,837
1958-59—					
April.....	152,944	25,096	2,384	180,424	14,313
May.....	155,002	25,787	2,534	183,323	15,061
June.....	155,032	27,422	2,654	185,108	15,900
July.....	154,162	28,033	2,675	184,870	16,261
August.....	154,503	27,136	2,692	184,331	15,511
September.....	153,859	25,295	2,733	181,887	14,849
October.....	153,758	24,344	2,744	180,846	15,857
November.....	153,975	24,195	2,689	180,859	15,348
December.....	154,311	24,111	2,551	180,973	15,693
January.....	154,996	24,303	2,443	181,742	16,424
February.....	155,726	24,080	2,399	182,205	15,698
March.....	156,447	24,085	2,412	182,944	14,965

2.—Earnings of Employees in Departmental Branches, Services and Corporations of the Federal Government, by Month, Years Ended Mar. 31, 1958 and 1959

NOTE.—Includes departments, boards, commissions, etc., listed in Tables 3 and 4 but excludes agency and proprietary corporations and other agencies, figures for which are given in Table 5.

Fiscal Year and Month	Salaried	Prevailing Rate	Ships' Officers and Crews	Total	Casuals and Others
REGULAR EARNINGS					
1957-58	\$	\$	\$	\$	\$
April.....	42,053,659	5,391,630	611,045	48,056,334	2,069,983
May.....	44,977,101	5,916,772	651,326	51,545,199	2,502,001
June.....	45,157,462	5,835,822	675,841	51,669,125	2,570,180
July.....	..	6,721,247	731,585	..	2,994,070
August.....	..	6,635,549	756,408	..	3,144,545
September.....	45,784,331	5,749,297	729,799	52,263,427	2,693,494
October.....	46,329,717	5,768,802	750,679	52,849,198	2,856,106
November.....	46,426,981	5,781,424	700,180	52,908,585	2,632,878
December.....	46,482,018	5,743,158	628,859	52,854,035	2,569,443
January.....	46,856,988	6,117,925	583,519	53,558,432	2,839,774
February.....	46,991,506	5,379,849	562,781	52,934,136	2,699,740
March.....	47,039,672	5,709,615	597,198	53,346,485	3,084,016
OVERTIME EARNINGS					
	\$	\$	\$	\$	\$
April.....	193,202	290,039	19,437	502,678	60,466
May.....	377,489	299,652	22,425	699,566	80,822
June.....	343,687	301,546	33,630	678,863	93,387
July.....	..	..	..	..	..
August.....	..	..	..	..	..
September.....	349,761	299,433	49,118	698,312	99,769
October.....	408,665	303,096	42,659	754,420	84,368
November.....	523,346	297,762	35,293	856,401	70,900
December.....	597,159	246,784	37,778	881,721	68,268
January.....	630,441	252,325	20,574	903,340	67,251
February.....	2,285,869 ¹	268,010	40,907	2,594,786	76,380
March.....	286,566	306,107	42,309	634,982	110,637
REGULAR EARNINGS					
1958-59	\$	\$	\$	\$	\$
April.....	47,105,216	5,917,744	631,281	53,654,241	2,947,923
May.....	47,647,627	6,326,779	692,748	54,667,154	3,254,223
June.....	47,844,140	6,370,492	704,553	54,919,185	3,464,185
July.....	47,904,133	6,868,645	696,824	55,469,602	3,923,442
August.....	48,010,619	6,681,572	745,300	55,437,491	3,745,937
September.....	48,032,135	6,131,830	752,177	54,916,142	3,568,386
October.....	48,315,982	6,276,262	745,493	55,337,737	3,750,981
November.....	48,340,368	5,731,927	724,685	54,796,980	3,173,926
December.....	48,430,675	6,111,770	696,367	55,238,812	3,459,201
January.....	48,693,267	6,215,370	657,538	55,566,175	3,530,869
February.....	48,930,687	5,551,299	640,579	55,122,565	3,297,248
March.....	48,999,898	6,025,257	640,557	55,665,712	3,469,663

¹ Includes Christmas overtime pay of Post Office employees.

2.—Earnings of Employees in Departmental Branches, Services and Corporations of the Federal Government, by Month, Years Ended Mar. 31, 1958 and 1959—concluded

Fiscal Year and Month	Salaried	Prevailing Rate	Ships' Officers and Crews	Total	Casuals and Others
OVERTIME EARNINGS					
1958-59—concluded	\$	\$	\$	\$	\$
April.....	674,513	289,611	56,228	1,020,352	100,317
May.....	703,505	235,271	51,673	990,449	106,438
June.....	517,811	269,224	56,084	843,119	114,077
July.....	417,765	403,275	77,139	898,179	169,637
August.....	365,378	360,690	73,620	799,688	161,112
September.....	445,051	320,541	88,550	854,142	169,945
October.....	409,049	256,006	93,954	759,009	145,215
November.....	460,784	256,728	79,146	796,658	117,159
December.....	719,974	273,845	62,675	1,056,494	111,347
January.....	673,435	272,042	49,481	994,958	102,535
February.....	2,301,641 ¹	239,807	51,912	2,593,360	88,098
March.....	353,922	294,746	47,806	696,474	110,380

¹ Includes Christmas overtime pay of Post Office employees.

Table 3 presents statistics for departmental branches, services and corporations on the basis of a classification by function. The purpose of such classification is to supply a means of studying the operation of government without the complication that results from differences in administrative establishment. This analysis is useful in three ways. First, it permits a detailed study of employment by the Government of Canada according to the main purposes or functions and, since these functions are not subject to the periodic changes that alter the administrative structure of the government, it is possible to develop a statistical series which, with minor exceptions, is consistent over an extended period of time. Secondly, since differences in administrative establishment are eliminated, it is possible to make meaningful comparisons between Federal Government expenditures on employment and similar expenditures by other levels of government. Thirdly, an analysis of the relationship between expenditures on employment and total expenditures may be made with regard to each function.

Table 4 is an administrative analysis of departmental branches, services and corporations, showing staff strength of these bodies as they are organized at present. Comparisons over a period of years should be based on the classification by function given in Table 3. In using these figures it should be noted that March employment of prevailing rate staffs is generally at a fairly low level as compared with summer months. Also, although most salaried staffs fluctuate little during the year, the Taxation Branch of the Department of National Revenue reaches peak employment in March and April because of the heavy flow of income tax returns during that period, the Legislation group employs extra staff during each session of Parliament, and certain departments employ considerable numbers of students in the summer months.

3.—Federal Government Employees as at Mar. 31, 1959, and Regular Earnings for the Year Ended Mar. 31, 1959, classified by Function

NOTE.—Excludes agency and proprietary corporations and other agencies, figures for which are given in summary form in Table 5.

Function	Salaried		Prevailing Rate		Ships' Officers and Crews		Totals		Casuals and Others	
	Em- ployees	Earnings	Em- ployees	Earnings	Em- ployees	Earnings	Em- ployees	Earnings	Em- ployees	Earnings
	No.	\$	No.	\$	No.	\$	No.	\$	No.	\$
Defence Services	34,456	117,113,404	14,415	48,476,918	589	1,851,828	49,460	167,442,150	6,249	20,827,182
Veterans Pensions and Other Benefits	11,879	41,814,468	1,669	2,873,233	—	—	13,548	44,687,701	—	—
General Government	29,143	108,349,506	2,925	7,734,745	8	23,082	32,076	116,127,933	580	1,419,961
Executive and administrative.....	26,540	99,507,282	2,925	7,734,745	8	23,082	29,473	107,265,709	533	1,359,186
Legislative.....	954	2,877,251	—	—	—	—	954	2,877,251	—	—
Research, planning and statistics.....	1,649	5,984,973	—	—	—	—	1,649	5,984,973	47	60,775
Protection of Persons and Property	10,498	41,000,667	—	—	—	—	10,498	41,000,667	2	9,363
Law enforcement.....	173	775,142	—	—	—	—	173	775,142	—	—
Corrections.....	2,072	8,104,325	—	—	—	—	2,072	8,104,325	2	4,440
Police protection.....	7,281	27,693,884	—	—	—	—	7,281	27,693,884	—	—
Other.....	972	4,427,316	—	—	—	—	972	4,427,316	—	4,923
Transportation and Communications	9,291	36,162,137	988	3,472,774	1,455	5,249,667	11,764	44,884,578	1,849	6,438,180
Airways.....	3,002	12,028,570	310	978,407	—	—	3,312	13,006,977	559	2,159,217
Highways, roads and bridges.....	229	1,282,783	58	255,130	—	—	287	1,537,913	66	281,848
Railways.....	160	650,563	—	—	—	—	160	650,563	—	—
Telephone, telegraph and wireless.....	2,195	8,453,591	14	61,385	—	—	2,209	8,514,976	40	222,503
Waterways.....	3,215	11,404,776	606	2,179,846	1,455	5,249,667	5,306	18,924,289	1,184	3,844,612
Other.....	490	1,971,874	—	—	—	—	490	1,971,874	—	—
Health	2,124	8,691,945	731	1,429,570	10	40,108	2,865	10,081,623	260	509,446
General.....	356	1,859,936	4	17,029	—	—	360	1,876,965	—	377
Public health.....	700	3,248,581	48	109,555	10	40,108	758	3,398,144	7	12,800
Medical, dental and allied service.....	41	134,272	3	887	—	—	44	138,959	2	2,713
Hospital care.....	1,027	3,859,155	676	1,313,339	—	—	1,703	5,172,555	251	493,556
Social Welfare	9,453	32,488,292	3	10,135	—	—	9,456	32,498,527	2,614	3,860,244
Aid to aged persons.....	18	80,640	—	—	—	—	18	80,640	—	—
Family allowances.....	831	2,576,680	—	—	—	—	831	2,576,680	—	—
Labour.....	376	1,663,660	—	—	—	—	376	1,663,660	4	6,431
National employment services.....	7,493	25,121,794	3	10,135	—	—	7,496	25,131,929	2,610	3,953,813
Other social welfare.....	735	3,045,618	—	—	—	—	735	3,045,618	—	—

For footnotes, see end of table, p. 152.

3.—Federal Government Employees as at Mar. 31, 1959, and Regular Earnings for the Year Ended Mar. 31, 1959, classified by Function—concluded

Function	Salaried		Prevailing Rate		Ships' Officers and Crews		Totals		Casuals and Others	
	Em- ployees	Earnings	Em- ployees	Earnings	Em- ployees	Earnings	Em- ployees	Earnings	Em- ployees	Earnings
	No.	\$	No.	\$	No.	\$	No.	\$	No.	\$
Recreational and Cultural Services.	1,394	6,240,882	1,942	4,373,785	—	—	3,336	10,714,667	832	1,586,179
Archives, art galleries, museums and libraries.....	254	1,097,068	4	16,164	—	—	258	1,113,252	27	1,063,103
Parks, beaches and other recreational areas.....	426	1,761,473	1,938	4,357,621	—	—	2,364	6,119,094	757	1,663,707
Other.....	714	3,482,321	—	—	—	—	714	3,482,321	48	152,069
Education.	1,488	5,879,479	—	—	—	—	1,438	5,879,479	42	213,694
Indian and Eskimo schools and schools in N.W.T.....	1,428	5,826,573	—	—	—	—	1,428	5,826,573	42	213,694
Universities, colleges and other schools.....	10	52,906	—	—	—	—	10	52,906	—	—
Natural Resources and Primary Industries.	12,308	55,001,291	1,229	5,318,209	320	1,162,817	13,557	61,482,317	1,222	2,760,384
Fish and game.....	1,548	7,108,898	51	382,827	320	1,162,817	1,919	8,654,532	164	238,842
Forests.....	7,761	3,806,810	60	298,035	—	—	821	4,104,845	11	91,931
Lands—settlement and agriculture.....	7,017	30,924,073	996	3,913,055	—	—	8,013	34,837,128	596	1,641,632
Minerals and mines.....	1,327	6,058,249	71	238,138 ^s	—	—	1,398	6,296,387	—	—
Water resources.....	201	1,018,495	5	60,864	—	—	206	1,079,359	2	10,653
Other.....	1,454	6,084,776	46 ^s	425,280 ^s	—	—	1,500	6,510,066	449	777,306
Trade and Industrial Development.	986	3,915,541	—	—	—	—	986	3,915,541	54	195,624
Public Service and Trading Enterprises.	175	662,750	—	—	—	—	175	662,750	43	203,007
Other.	33,302	120,904,285	183	509,578	—	—	33,485	121,413,863	1,218	3,142,740
Civil Defence.....	136	620,665	32	67,786	—	—	178	688,451	1	2,966
Other.....	32,166	119,283,620	151	441,792	—	—	32,317	120,725,312	1,217	3,139,774
International co-operation and assistance.....	120	684,200	—	—	—	—	120	684,200	—	—
Immigration and Citizenship.....	2,575	9,670,243	—	—	—	—	2,656	9,834,084	35	34,758
External Affairs.....	1,804	6,887,713	—	—	—	—	1,804	6,887,713	130	86,259
Bullion and coinage.....	1,190	707,291	—	—	—	—	1,190	707,291	—	—
Post Office.....	24,207	83,066,326	24 ^s	124,245 ^s	—	—	24,231	83,190,571	508 ^s	645,587 ^s
Other.....	4,260	19,177,758	46 ^s	153,707 ^s	—	—	4,306	19,331,463	544	2,373,170
Grand Totals.	156,447	578,254,747 ¹¹	24,085	74,208,947 ¹¹	2,412	8,328,102 ¹¹	182,944	660,791,796	14,965	41,585,984 ¹¹

¹ Excludes the Governor General and ten Lieutenant-Governors with salaries amounting to \$139,667.
² Excludes judges; the Estimates for the fiscal year 1958-59 list 332 such positions.
³ Excludes field parties; 562 persons were employed for varying periods, earning \$355.
⁴ Excludes field parties; 60 persons were employed for varying periods, earning \$355.
⁵ Excludes field parties; 71 persons were employed for varying periods, earning \$321,270.
⁶ Excludes field parties; 26 persons were employed for varying periods, earning \$187,905.
⁷ Excludes field parties; 26 persons were employed for varying periods, earning \$187,905.
⁸ Excludes field parties; 5 persons were employed for varying periods, earning \$1,867.
⁹ Excludes Christmas helpers earning \$2,637,389 during the 1958 Christmas season.
¹⁰ Excludes retroactive payments reported amounting to \$67,576 for salaries.
¹¹ Excludes casuals and others.

4.—Federal Government Employees as at Mar. 31, 1959, and Regular Earnings for the Year Ended Mar. 31, 1959, classified by Department and Principal Branch or Service

NOTE.—Excludes agency and proprietary corporations and other agencies, figures for which are given in summary form in Table 5.

Department and Branch or Service	Salaried		Prevailing Rate		Ships' Officers and Crews		Totals		Casuals and Others	
	Em- ployees	Earnings \$	Em- ployees	Earnings \$	Em- ployees	Earnings \$	Em- ployees	Earnings \$	Em- ployees	Earnings \$
	No.		No.		No.		No.		No.	
Agriculture.	6,564	29,412,298	998	3,923,210	—	—	7,562	33,335,498	573	1,537,724
Administration Service.....	1,218	880,345	—	4,857	—	—	218	7,717,404	—	976
Science Service.....	1,494	6,939,821	55	215,583	—	—	1,479	8,743,202	25	106,526
Experimental Farms Service.....	1,232	5,633,926	802	3,099,276	—	—	2,034	8,846,463	—	—
Production Service.....	1,328	8,579,077	67	267,376	—	—	1,995	4,349,393	218	486,954
Marketing Service.....	1,008	4,334,963	2	4,430	—	—	1,010	3,535,844	5	12,645
Special.....	754	3,004,186	72	331,688	—	—	826	3,535,844	325	930,623
Atomic Energy—Atomic Energy Control Board.	8	33,582	—	—	—	—	8	33,582	—	—
Auditor General's Office.	133	754,680	—	—	—	—	133	754,680	—	—
Board of Broadcast Governors.	6	2,235	—	—	—	—	6	2,235	—	—
Chief Electoral Officer, Office of the.	16	103,383	—	—	—	—	16	103,383	—	—
Citizenship and Immigration.	4,212	16,393,778	44	101,226	—	—	4,256	16,500,004	74	232,660
Departmental Administration.....	152	572,745	1	2,948	—	—	153	575,693	—	—
Citizenship.....	164	621,913	—	—	—	—	164	621,913	—	—
Immigration Branch.....	1,940	7,181,010	43	98,278	—	—	1,983	7,279,288	32	18,966
Indian Affairs Branch.....	1,956	8,023,110	—	—	—	—	1,956	8,023,110	42	213,694
Civil Service Commission.	645	2,817,072	—	—	—	—	645	2,817,072	22	7,719
Defence Production.	1,432	6,134,192	—	—	—	—	1,432	6,134,192	—	—
External Affairs.	1,833	7,109,473	—	—	—	—	1,833	7,109,473	130	86,259
Departmental Administration.....	799	3,822,435	—	—	—	—	799	3,822,435	—	—
Representation abroad.....	1,019	3,195,722	—	—	—	—	1,019	3,195,722	130	86,259
International Joint Commission.....	15	91,316	—	—	—	—	15	91,316	—	—
Finance.	5,014	17,269,374	—	—	—	—	5,014	17,269,374	277	382,046
General Administration.....	4,557	15,533,136	—	—	—	—	4,557	15,533,136	274	379,116
Administration of various Acts.....	438	1,676,577	—	—	—	—	438	1,676,577	—	—
Contingencies and miscellaneous.....	19	50,642	—	—	—	—	19	50,642	3	2,930
Special.....	—	9,019	—	—	—	—	—	9,019	—	—
Fisheries.	1,468	6,711,833	51	352,673	320	1,162,817	1,839	8,257,323	150	224,009
General Services.....	165	726,158	6	6,179	—	—	171	726,337	9	37,252
Field Services.....	787	3,396,009	33	360,725	244	941,632	1,074	4,698,366	132	131,763
Special.....	28	116,833	10	8,140	13	40,500	51	165,563	—	—
Fisheries Research Board of Canada.....	478	2,478,833	2	7,629	63	180,595	543	2,667,057	9	45,491

For footnotes, see end of table, p. 156.

4.—Federal Government Employees as at Mar. 31, 1959, and Regular Earnings for the Year Ended Mar. 31, 1959, classified by Department and Principal Branch or Service—continued

Department and Branch or Service	Salaried		Prevailing Rate		Ships' Officers and Crews		Totals		Casuals and Others	
	Em- ployees	Earnings \$	Em- ployees	Earnings \$	Em- ployees	Earnings \$	Em- ployees	Earnings \$	Em- ployees	Earnings \$
	No.		No.		No.		No.		No.	
Governor General and Lieutenant-Governors—										
Office of the Secretary to the Governor General	13	51,472	—	—	—	—	13	51,472	—	—
Insurance	94	487,078	—	—	—	—	94	487,078	—	—
Justice										
Department	2,364	9,450,518	—	—	—	—	2,364	9,450,518	2	9,363
Office of the Commissioner of Penitentiaries	232	1,346,191	—	—	—	—	232	1,346,191	—	4,923
	2,072	8,104,327	—	—	—	—	2,072	8,104,327	2	4,440
Labour										
General Administration	8,094	27,563,545	10	25,953	—	—	8,104	27,589,498	2,627	3,970,858
Special Services	548	2,228,774	—	—	—	—	548	2,228,774	17	17,045
National Training Co-ordination	29	88,505	7	15,818	—	—	29	88,505	—	—
Government Employees Compensation	10	52,906	—	—	—	—	10	52,906	—	—
Unemployment Insurance Commission	21	81,475	—	—	—	—	21	81,475	—	—
	7,493	25,121,765	3	10,135	—	—	7,496	25,131,930	2,610	3,953,813
Legislation										
The Senate	925	2,722,395	—	—	—	—	925	2,722,395	—	—
House of Commons	164	483,777	—	—	—	—	164	483,777	—	—
Library of Parliament	699	1,977,940	—	—	—	—	699	1,977,940	—	—
	62	260,878	—	—	—	—	62	260,878	—	—
Mines and Technical Surveys										
Administration Services	2,608	11,633,737	76	252,028	50	213,772	2,734	12,099,537	—	—
Surveys and Mapping Branch	186	826,566	2	6,632	—	—	188	833,198	—	—
Geological Survey of Canada	1,051	4,553,812	14	2,585 ⁴	50 ⁵	213,772 ⁵	1,102	4,770,169	8	6
Mines Branch	549	2,453,543	107	13,499 ⁷	—	—	559	2,437,042	—	—
Geographical Branch	593	2,812,067	59	218,007	—	—	652	3,030,071	—	—
Dominion Observatories	84	308,902	8	—	—	—	84	308,902	—	—
General	126	621,251	4 ⁹	11,305 ⁸	—	—	130	632,556	—	—
Dominion Coal Board	19	87,596	10	—	—	—	19	87,596	—	—
National Defence										
Defence Services—	33,014	110,947,335	14,415	48,476,918	559	1,851,828	48,018	161,276,081	6,249	20,827,182
Departmental Administration	620	2,405,247	15	43,521	—	—	635	2,538,768	—	—
Inspection Services	1,295	5,295,552	59	170,781	—	—	1,354	5,466,333	—	—
Navy	6,804	22,949,320	3,912	13,634,798	569	1,851,828	11,305	38,735,946	1,461	5,144,501
Army	12,634	39,807,296	5,384	19,377,848	—	—	18,018	59,185,144	2,137	7,801,440
Air	9,154	28,742,171	4,814	13,997,539	—	—	13,968	42,739,710	2,479	7,396,777
Defence Research and Development	2,507	11,657,749	231	952,431	—	—	2,738	12,610,180	172	484,464
National Film Board	708	3,480,086	—	—	—	—	708	3,480,086	48	132,069
National Gallery of Canada	54	249,436	—	—	—	—	54	249,436	23	33,424

4.—Federal Government Employees as at Mar. 31, 1959, and Regular Earnings for the Year Ended Mar. 31, 1959, classified by Department and Principal Branch or Service—concluded

Department and Branch or Service	Salaried		Prevailing Rate		Ships' Officers and Crews		Totals		Casuals and Others	
	Em- ployees No.	Earnings \$	Em- ployees No.	Earnings \$	Em- ployees No.	Earnings \$	Em- ployees No.	Earnings \$	Em- ployees No.	Earnings \$
Trade and Commerce	4,018	15,689,577	—	1,542	—	—	4,018	15,691,119	176	632,136
General Administration.....	586	3,619,162	—	—	—	—	586	3,619,162	—	—
Exhibitions.....	32	1,027,801	—	—	—	—	32	1,027,801	—	—
Standards Branch.....	273	1,707,245	—	—	—	—	273	1,707,245	—	—
Domestic Bureau of Statistics.....	1,624	5,866,440	—	—	—	—	1,624	5,866,440	—	—
Board of Grain Commissioners.....	1,040	4,118,042	—	1,542	—	—	1,040	4,118,042	—	—
Special.....	41	185,887	—	—	—	—	41	185,887	—	—
Transport	10,014	38,168,567	963	3,312,404	1,272	4,290,108	12,249	45,771,079	1,138	4,309,563
Departmental Administration.....	490	1,971,874	—	—	—	—	490	1,971,874	—	—
The St. Lawrence River Joint Board of Engineers— Canadian Section.....	13	88,045	—	—	—	—	13	88,045	—	—
Canal Services.....	989	3,770,885	362	1,478,028	36	138,647	1,387	5,387,560	295	915,227
Marine Services.....	1,559	4,372,575	235	652,182	1,236	4,151,461	3,030	9,176,218	239	957,426
Railway and Steamship Services.....	8	28,812	—	—	—	—	8	28,812	—	—
Air Services.....	6,715	26,558,878	366	1,182,194	—	—	7,081	27,781,072	614	2,438,910
Air Transport Board.....	56	252,730	—	—	—	—	56	252,730	—	—
Board of Transport Commissioners for Canada.....	160	950,562	—	—	—	—	160	950,562	—	—
Canadian Maritime Commission.....	24	134,206	—	—	—	—	24	134,206	—	—
Veterans Affairs	11,879	41,814,462	1,669	2,873,233	—	—	13,548	44,687,695	—	—
Departmental Administration.....	579	1,952,860	4	9,886	—	—	583	1,992,746	—	—
District Services.....	634	2,231,431	129	395,427	—	—	763	2,626,858	—	—
Veterans Welfare Services.....	725	3,042,240	—	—	—	—	725	3,042,240	—	—
Treatment Services.....	8,241	27,174,346	1,536	2,467,920	—	—	9,777	29,642,266	—	—
Prosthetic Services.....	214	814,278	—	—	—	—	214	814,278	—	—
Veterans Bureau.....	131	544,642	—	—	—	—	131	544,642	—	—
War Veterans Allowance Board.....	24	126,485	—	—	—	—	24	126,485	—	—
Veterans Insurance.....	17	64,978	—	—	—	—	17	64,978	—	—
Canadian Pension Commission.....	408	1,913,839	—	—	—	—	408	1,913,839	—	—
Soldier Settlement and Veterans' Land Act.....	906	3,919,363	—	—	—	—	906	3,919,363	—	—
Grand Totals	156,447	578,254,747¹	24,055	74,208,947¹	2,412	8,325,102¹	182,944	660,791,796	14,965	41,555,984¹

¹ Includes "North Atlantic Treaty Organization" and "Terminable Services".
² Excludes the Governor General and ten Lieutenant-Governors with salaries amounting to \$139,667.
³ Excludes judges; the Estimates for the fiscal year 1958-59 list 332 such positions.
⁴ Excludes field parties; 562 persons were employed for varying periods, earning \$821,270.
⁵ Excludes field parties; 562 persons were employed for varying periods, earning \$821,270.
⁶ Excludes field parties; 562 persons were employed for varying periods, earning \$821,270.
⁷ Excludes field parties; 562 persons were employed for varying periods, earning \$821,270.
⁸ Excludes field parties; 562 persons were employed for varying periods, earning \$821,270.
⁹ Excludes field parties; 562 persons were employed for varying periods, earning \$821,270.
¹⁰ Excludes field parties; 562 persons were employed for varying periods, earning \$821,270.
¹¹ Excludes field parties; 562 persons were employed for varying periods, earning \$821,270.
¹² Excludes field parties; 562 persons were employed for varying periods, earning \$821,270.
¹³ Excludes field parties; 562 persons were employed for varying periods, earning \$821,270.

Agency and Proprietary Corporations and Other Agencies.—The following are organizations owned by the Federal Government. Aggregate employment statistics are presented in Table 5.

Agency Corporations

Atomic Energy of Canada Limited	Defence Construction (1951) Limited
Canadian Arsenals Limited	National Battlefields Commission
Canadian Commercial Corporation	National Capital Commission
Canadian Patents and Development Limited	National Harbours Board
Crown Assets Disposal Corporation	Northern Canada Power Commission

Proprietary Corporations

Canadian Broadcasting Corporation	Eldorado Aviation Limited
Canadian Farm Loan Board (now Farm Credit Corporation)	Eldorado Mining and Refining Limited
Canadian National Railways	Export Credits Insurance Corporation
Canadian Overseas Telecommunication Corporation	Northern Transportation Company Limited
Central Mortgage and Housing Corporation	Polymer Corporation Limited
Cornwall International Bridge Company Limited	St. Lawrence Seaway Authority
	Trans-Canada Air Lines

Other Agencies

Bank of Canada	Northern Ontario Pipe Line Crown Corporation
Canadian Wheat Board	Office of the Custodian
Industrial Development Bank	

5.—Employees and Earnings in Agency and Proprietary Corporations and Other Agencies, by Month, Years Ended Mar. 31, 1958 and 1959

Month	1957-58		1958-59	
	Employees	Earnings	Employees	Earnings
	No.	\$'000	No.	\$'000
April.....	146,228	44,915	135,802	45,443
May.....	150,325	46,467	140,477	47,505
June.....	153,378	47,421	143,639	47,486
July.....	156,629	50,468	145,859	49,558
August.....	156,941	50,360	145,939	49,690
September.....	154,622	48,919	143,385	48,814
October.....	150,921 ^r	49,001 ^r	139,285	47,657
November.....	146,206	47,572	134,263	45,426
December.....	141,029	44,898	133,071	46,621
January.....	136,841	44,328	132,208	45,738
February.....	137,050	44,557	131,452	45,380
March.....	136,146	43,967	131,973	47,882

PART V.—CANADA'S EXTERNAL RELATIONS*

The growth of Canada's international status is reflected in the development of the Department of External Affairs. A review of the organization and development of that Department is given in the 1952-53 Year Book, pp. 101-104.

Section 1.—Diplomatic Representation as at Jan. 31, 1960

NOTE.—Changes in this listing subsequent to Jan. 31, 1960 and names of current Representatives are given in *Canadian Representatives Abroad and Representatives of Other Countries in Canada*, published quarterly and obtainable from the Queen's Printer, Ottawa, price 35 cents.

1.—Canadian Representation Abroad

Country and Year Representation Established	Present Status of Representative	Address
Argentina.....1941	Ambassador.....	Bartolomé Mitre, 478, Buenos Aires
Australia.....1939	High Commissioner.....	State Circle, Canberra
Austria.....1952	Ambassador.....	Karntnerring 5, Vienna
Belgium.....1939	Ambassador.....	35, rue de la Science, Brussels
Brazil.....1941	Ambassador.....	Avenida Presidente Wilson, 165, Rio de Janeiro
Burma.....1958	Ambassador.....	c/o Office of the High Commissioner for Canada, Kuala Lumpur, Malaya, (P.O. Box 990)
Ceylon.....1953	High Commissioner.....	6 Gregory's Road, Cinnamon Gardens, Colombo
Chile.....1942	Ambassador.....	Avenida General Bulnes 129, Santiago
Colombia.....1953	Ambassador.....	Carrera 10, 16-92, 8th Floor (P.O. Box Apartado 1618), Bogota
Cuba.....1945	Ambassador.....	Edificio Ambar Motors, Avenida Menocal No. 16, Havana
Czechoslovakia.....1943	Chargé d'Affaires <i>ad interim</i> ...	Mickiewiczova 6, Prague 2
Denmark.....1946	Ambassador.....	Prinsesse Maries Allé 2, Copenhagen
Dominican Republic.....1954	Ambassador.....	408 Calle El Conde, Ciudad Trujillo
Finland.....1949	Minister.....	Borgmatarbrinken C-3. 32, Helsinki
France.....1928	Ambassador.....	35, avenue Montaigne, Paris VIII
Germany.....1950	Ambassador.....	Zitelmannstrasse 22, Bonn
Ghana.....1957	High Commissioner.....	E 115/3 Independence Avenue (Dodowah Road), Accra
Greece.....1943	Ambassador.....	31, avenue Vassilissis Sofias, Athens
Haiti.....1954	Ambassador.....	Route du Canapé Vert, St. Louis de Turgeau, Port-au-Prince
Iceland.....1949	Minister.....	c/o Canadian Embassy, Fridtjof Nansens Plass 5, Oslo, Norway
India.....1947	High Commissioner.....	4 Aurangzeb Road, New Delhi
Indonesia.....1953	Ambassador.....	Djalan Budi Kemuliaan No. 6, Djakarta
Iran.....1958	Minister.....	Avenue Anatole France at Blvd. Aké Karaj, P.O. Box 1610, Tehran
Ireland.....1940	Ambassador.....	92 Merrion Square West, Dublin
Israel.....1954	Ambassador.....	Farmers' Bldg., 8 Rehov Hakirya, Tel Aviv
Italy.....1947	Ambassador.....	Via Appia Antica, 183-185, Rome
Japan.....1923	Ambassador.....	16 Omote-Machi, 3-Chome, Akasaka Minato-ku, Tokyo
Lebanon.....1954	Ambassador.....	Immeuble Alpha, rue Clemenceau, Beirut
Luxembourg.....1945	Minister.....	c/o Canadian Embassy, 35, rue de la Science, Brussels, Belgium
Malaya.....1958	High Commissioner.....	Kuala Lumpur (P.O. Box 990)
Mexico.....1944	Ambassador.....	Melchor Ocampo 463-7, Mexico 5, D.F.
Netherlands.....1939	Ambassador.....	5 and 7 Sophialaan, The Hague
New Zealand.....1940	High Commissioner.....	Government Life Insurance Bldg., Custom-house Quay, C.I., Wellington
Norway.....1943	Ambassador.....	Fridtjof Nansens Plass 5, Oslo
Pakistan.....1950	High Commissioner.....	Metropole Hotel, Victoria Road, Karachi
Peru.....1944	Ambassador.....	Edificio Boza, Carabaya 831, Plaza San Martin, Lima
Poland.....1943	Chargé d'Affaires <i>ad interim</i> ...	31 Ulica Katowicka, Saska Kepa, Warsaw
Portugal.....1952	Ambassador.....	Rua Marques da Fronteira No. 8, Lisbon
Spain.....1953	Ambassador.....	Edificio España, Plaza de España 2, Madrid
Sweden.....1947	Ambassador.....	Strandvagon 7-C, Stockholm
Switzerland.....1947	Ambassador.....	88 Kirchenfeldstrasse, Berne
Turkey.....1947	Ambassador.....	Mudafaa Huduk Caddesi, No. 19, Cankaya, Ankara
Union of South Africa.....1940	High Commissioner.....	Kerry Bldg., 238 Vermeulen St., Pretoria

* Prepared by the Department of External Affairs.

1.—Canadian Representation Abroad—concluded

Country and Year Representation Established	Present Status of Representative	Address
Union of Soviet Socialist Republics.....1943	Ambassador.....	23 Starokonyushenny Pereulok, Moscow
United Arab Republic.....1954	Ambassador.....	6, Sharia Rustom, Garden City, Cairo
United Kingdom.....1880	High Commissioner.....	Canada House, Trafalgar Square, London, S.W. 1
United States of America.....1927	Ambassador.....	1746 Massachusetts Avenue, N.W., Wash- ington, D.C.
Uruguay.....1952	Chargé d'Affaires <i>ad interim</i>	1409 Avenida Agraciada, Piso 7°, Monte- video
Venezuela.....1952	Ambassador.....	Edificio Pan - American, Puente Urapal Candelaria, Caracas
Yugoslavia.....1943	Ambassador.....	Proliterskih Brigada 69, Belgrade
Other Missions		
Canadian Military Mission (1946)...	Head of Mission.....	Perthshire Block, Olympic Stadium, Head- quarters Berlin, (British Sector)
Canadian Delegation to the North Atlantic Council (1952) and Organization for European Eco- nomic Co-operation (1950).....	Ambassador.....	1, rue Chavez, Paris XVI
Commissioner's Office (1958).....	Commissioner.....	Colonial Building, 72 South Quay, Port-of- Spain, Trinidad, West Indies
Permanent Delegation of Canada to the United Nations (1948)...	Permanent Representative....	750 Third Avenue, New York, N.Y.
Permanent Delegation of Canada to European Office of the United Nations (1948).....	Permanent Representative....	16, Parc du Chateau Banquet, Geneva
Consulates		
Brazil.....1947	Consul.....	Rua 7 de Abril 252, São Paulo
Germany.....1956	Consul.....	Ferdinandstrasse 69, Hamburg
Republic of the Philippines...1949	Consul General.....	Ayala Bldg., Juan Luna St., Manila
United States of America ...1948	Consul General.....	532 Little Bldg., 80 Boylston St., Boston 16, Mass.
".....1947	Consul General.....	Suite 1412, Garland Bldg., 111 North Wabash Ave., Chicago, Ill.
".....1948	Consul.....	1139 Penobscot Bldg., Detroit 26, Mich.
".....1953	Consul General.....	510 West Sixth St., Los Angeles 14, Cal.
".....1952	Consul General.....	215 International Trade Mart, New Orleans 12, La.
".....1943	Consul General.....	680 Fifth Ave., New York, N.Y.
".....1947	Honorary Vice-Consul.....	443 Congress St., Portland, Maine
".....1948	Consul General.....	400 Montgomery St., San Francisco 4, Cal.
".....1953	Consul General.....	1407 Tower Bldg., 7th Ave. at Olive Way, Seattle 1, Wash.

2.—Representation of Other Countries in Canada

Country and Year Representation Established	Present Status of Representative	Address
Argentina.....1941	Ambassador.....	211 Stewart Street, Ottawa
Australia.....1940	High Commissioner.....	100 Sparks Street, Ottawa
Austria.....1952	Ambassador.....	140 Wellington Street, Ottawa
Belgium.....1937	Ambassador.....	168 Laurier Avenue East, Ottawa
Brazil.....1941	Ambassador.....	305 Stewart Street, Ottawa
Burma.....1953	Ambassador.....	Beacon Arms Hotel, Ottawa
Ceylon.....1957	High Commissioner.....	77 Powell Avenue, Ottawa
Chile.....1942	Ambassador.....	Suite 216, 56 Sparks Street, Ottawa
China.....1942	Ambassador.....	201 Wurttemberg Street, Ottawa
Colombia.....1953	Ambassador.....	Apt. 33, The Roxborough, Ottawa
Cuba.....1945	Ambassador.....	Apt. 44, The Roxborough, Ottawa
Czechoslovakia.....1942	Minister.....	171 Clemow Avenue, Ottawa
Denmark.....1946	Ambassador.....	446 Daly Avenue, Ottawa
Dominican Republic.....1954	Ambassador.....	273 Bank Street, Ottawa
Finland.....1948	Chargé d'Affaires.....	85 Range Road, Ottawa
France.....1928	Ambassador.....	42 Sussex Street, Ottawa

2.—Representation of Other Countries in Canada—concluded

Country and Year Representation Established	Present Status of Representative	Address
Germany.....1951	Ambassador.....	1 Waverley Street, Ottawa
Greece.....1942	Ambassador.....	Chateau Laurier Hotel, Ottawa
Haiti.....1954	Ambassador.....	140 Slater Street, Ottawa
Iceland.....1948	Minister.....	Chateau Laurier Hotel, Ottawa
India.....1947	High Commissioner.....	205 MacLaren Street, Ottawa
Indonesia.....1953	Ambassador.....	275 MacLaren Street, Ottawa
Iran.....1956	Minister.....	Apt. 404, 85 Range Road, Ottawa
Ireland.....1939	Ambassador.....	The Roxborough, Ottawa
Israel.....1953	Ambassador.....	45 Powell Avenue, Ottawa
Italy.....1947	Ambassador.....	172 MacLaren Street, Ottawa
Japan.....1928	Ambassador.....	88 Metcalfe Street, Ottawa
Lebanon.....1955	Ambassador.....	The Roxborough, Ottawa
Luxembourg.....1950	Minister.....	Chateau Laurier Hotel, Ottawa
Mexico.....1944	Ambassador.....	88 Metcalfe Street, Ottawa
Netherlands.....1939	Ambassador.....	12 Marlborough Avenue, Ottawa
New Zealand.....1942	High Commissioner.....	77 Metcalfe Street, Ottawa
Norway.....1942	Ambassador.....	140 Wellington Street, Ottawa
Pakistan.....1949	High Commissioner.....	505 Wilbrod Street, Ottawa
Peru.....1944	Ambassador.....	539 Island Park Drive, Ottawa
Poland.....1942	Chargé d'Affaires <i>ad interim</i>	10 Range Road, Ottawa
Portugal.....1952	Ambassador.....	285 Harmer Avenue, Ottawa
Spain.....1953	Ambassador.....	149 Daly Avenue, Ottawa
Sweden.....1943	Ambassador.....	140 Wellington Street, Ottawa
Switzerland.....1946	Ambassador.....	5 Marlborough Avenue, Ottawa
Tunisia.....1957	Ambassador.....	Chateau Laurier Hotel, Ottawa
Turkey.....1944	Ambassador.....	197 Wurtemburg Street, Ottawa
Union of South Africa.....1938	High Commissioner.....	9 Rideau Gate, Ottawa
Union of Soviet Socialist Republics.....1942	Ambassador.....	285 Charlotte Street, Ottawa
United Arab Republic.....1954	Ambassador.....	The Roxborough, Ottawa
United Kingdom.....1928	High Commissioner.....	Earncliffe, Ottawa
United States of America.....1927	Ambassador.....	100 Wellington Street, Ottawa
Uruguay.....1948	Chargé d'Affaires <i>ad interim</i>	The Roxborough, Ottawa
Venezuela.....1953	Ambassador.....	The Roxborough, Ottawa
Yugoslavia.....1942	Ambassador.....	17 Blackburn Avenue, Ottawa

Section 2.—International Activities, 1958-59

Subsection 1.—Canada and Commonwealth Relations

Throughout the period from mid-1958 to mid-1959 the vigour and significance of the Commonwealth continued to be demonstrated in a variety of ways. In addition to the constant process of Commonwealth consultation, the importance of which is by no means diminished by the fact that it usually attracts little public attention, there were several important formal Commonwealth meetings and a number of exchanges of visits by leading Commonwealth officials.

Canada was privileged in the early summer of 1959 to welcome Her Majesty Queen Elizabeth II who, in addition to being Queen of Canada, occupies the unique position of Head of the Commonwealth. Her Majesty, accompanied by His Royal Highness the Prince Philip, came to Canada to officiate at the opening of the St. Lawrence Seaway and made an extensive tour of the country. Her Royal Highness the Princess Margaret spent a month in Canada in the summer of 1958.

Perhaps the most important formal Commonwealth meeting during the period was the Commonwealth Trade and Economic Conference which was held at Montreal in September 1958 under the chairmanship of Canada's Minister of Finance. The central theme of the Conference, which was attended by representatives of all member countries and of a number of colonial territories, was "an expanding Commonwealth in an expanding world". Several important decisions, designed to increase trade within the Commonwealth, and between the Commonwealth and other countries, were announced at the Conference by Canada, the United Kingdom and others. Considerable attention was

also devoted to the problem of assisting the economic advancement of less-developed areas. In this connection information on Canada's part in the Colombo Plan and in Commonwealth technical assistance is given in Subsection 4, pp. 169-170.

The Conference recognized that the provision of extended educational and training facilities was an essential condition of the economic development of the Commonwealth. Agreement was reached in principle on the initiation of a new scheme of Commonwealth scholarships and fellowships, under which it is intended that in due course a thousand Commonwealth scholars and fellows should be studying in other Commonwealth countries at any one time. Of these, some 250 will be studying in Canada. This initiative was followed up at a Commonwealth Conference on Education held at Oxford in the summer of 1959.

The latest countries to reach full membership in the Commonwealth are Ghana and the Federation of Malaya—in March and August, respectively, of 1957. To both countries Canada has appointed High Commissioners, as well as to the West Indies Federation. Nigeria has progressed rapidly towards independence, an event scheduled for Oct. 1, 1960; with a population of some 35,000,000 it will be the largest single country in Africa. Nigerian leaders made it known that they hoped their country would remain associated with the Commonwealth after independence. The Secretary of State for External Affairs announced in July 1959 that Canada intended to open a diplomatic mission in Lagos, Nigeria, at an early date. He indicated at the same time that it is the Government's intention to open a diplomatic mission in Salisbury, the capital of the Federation of Rhodesia and Nyasaland, as soon as circumstances permit.

Perhaps the most extensive visit to other Commonwealth countries by a Commonwealth leader during this period was undertaken by Prime Minister Diefenbaker in the autumn of 1958. After a short stop at New York, the Prime Minister spent a week in the United Kingdom where he had useful talks with Prime Minister Macmillan. He made brief visits in France, Germany and Italy and to the Canadian Armed Forces in Europe. Official visits followed to Pakistan, India, Ceylon, the Federation of Malaya, Australia and New Zealand, with brief stops in Singapore and Indonesia. The Prime Minister, who was accompanied by Mrs. Diefenbaker, was welcomed in each Commonwealth country by its Prime Minister. In speeches and at press conferences he repeatedly expressed his belief in the vitality of the Commonwealth and in the importance of its role in the world.

Canada received a number of distinguished Commonwealth visitors: the Prime Minister of Ghana, Dr. Kwame Nkrumah; the Prime Minister and Minister of Foreign Affairs of New Zealand, Mr. Walter Nash; the Prime Minister of Australia, Mr. R. G. Menzies, and the Minister for External Affairs, Mr. R. G. Casey; the Governor General of the West Indies Federation, Lord Hailes, and the Prime Minister, Sir Grantley Adams; the Minister of Finance of Pakistan, the Chief Justice of Nigeria, and many others. Visitors from the United Kingdom included the Prime Minister, Mr. Harold Macmillan, the Foreign Secretary, Mr. Selwyn Lloyd, and the Secretary of State for Commonwealth Relations, Lord Home.

Subsection 2.—Canada and the United Nations

Apart from the appeal of Laos concerning alleged military aggression by North Viet Nam, the United Nations in 1959 had a respite from the recurrent international crises which had confronted the organization during the previous two years. The United Nations, however, continued its work of maintaining peace in sensitive areas, notably through the United Nations Emergency Force (UNEF). A new political issue, Communist China's repression in Tibet, came before the United Nations but the subjects receiving greatest attention at the fourteenth session of the General Assembly concerned disarmament and related problems.

The relative stability that seemed to prevail in the Middle East was partly a result of the intervention of the United Nations in late 1958. Through the Secretary-General, special United Nations representation, in addition to the United Nations Observation Group in Lebanon, was established in the area. The United States and the United Kingdom were able to withdraw their forces and the Observation Group began to disband late in the year.

Canada, in addition to participation in UNEF and UNTSO (United Nations Truce Supervision Organization) in the Middle East, played an active role in the several disarmament issues and took the initiative in a proposal for a greater measure of international co-operation through the United Nations Scientific Committee on the Effects of Atomic Radiation in the collection and collation of information on radiation and its effects. Concerning the United Nations-sponsored World Refugee Year, Canada took special action in accepting 100 tuberculous refugees and their families.

Developments in important United Nations bodies during the period under review are summarized below.

General Assembly.—The fourteenth session of the General Assembly met in New York from Sept. 15 to Dec. 13, 1959, under the presidency of Señor Victor Belaunde of Peru. The Hon. Howard Green, Secretary of State for External Affairs, was chairman of the Canadian Delegation.

A new item to come before the Assembly was the appeal of the Dalai Lama concerning Communist China's suppression of the revolt in Tibet. This appeal aroused considerable sympathy in the West and among Asian and African nations but a number of countries expressed doubt as to the usefulness of an Assembly debate on the issue. A formal draft resolution calling in particular for "respect for the fundamental human rights of the Tibetan people" was presented and adopted by a vote of 45 to 9, with 26 abstentions. Canada supported the resolution but in so doing followed the general line of emphasizing human rights and the rule of law.

Premier Khrushchov's Sept. 18 speech to the General Assembly in which he proposed "general and complete" disarmament, together with suggestions made by the United Kingdom Foreign Secretary, produced a major debate on disarmament. The Soviet delegation sought outright United Nations endorsement for the Khrushchov plan, which called for a four-year time-table that would eliminate all weapons of mass destruction, disband all armies, navies and military establishments, and leave to the individual States only "strictly limited contingents of police . . . to maintain order". Controls would be fully established only after the entire process was complete. The United Kingdom plan provided for a step-by-step approach toward total disarmament, beginning with a nuclear test ban and proceeding toward a cut-off of nuclear weapons production, the limitation and later reduction of armed forces, the destruction of all nuclear weapons and a final reduction in armed forces to internal security levels. Each step of the plan would be accompanied by appropriate international controls. In contrast to the Khrushchov plan, the United Kingdom envisaged an international police force under the United Nations to preserve world peace. The resolution adopted as a result of the debate on these proposals represented a compromise, and was sponsored by all 82 members of the United Nations. In particular, the resolution called on governments to make every effort to achieve a constructive solution of the disarmament problem and referred the proposals and related declarations to the ten-nation Disarmament Committee which had been agreed upon in September 1959 by the United States, the United Kingdom, France and the U.S.S.R. As an indication of the importance that Canada attaches to this Committee, it was announced toward the end of the year that Lieut.-Gen. E. L. M. Burns, after five years of distinguished service as Chief of Staff of UNTSO and UNEF Commander, was returning to Canadian Government service and would be the Canadian representative on the Disarmament Committee.

Canada has taken the position that the United Nations should be associated as closely as possible with the ten-nation Disarmament Committee. The United Nations Disarmament Commission convened on Sept. 10 to note with approval the creation of the Committee. It is intended that the Committee report regularly to the United Nations and that the United Nations, probably through the Disarmament Commission, discuss the progress of the Committee's work.

The General Assembly discussed a number of questions related to disarmament. The Canadian initiative for increased world-wide co-operation in the collection of data on radiation and a study of its effects was adopted unanimously. This proposal arose from Canada's recognition of the widespread concern over the possible hazards from radio-active fallout resulting from nuclear tests. It is hoped that expanded international co-operation through the United Nations Scientific Committee on the Effects of Atomic Radiation and the competent Specialized Agencies will stimulate research into the effects of low-level radiation on man and his environment and the distribution of fallout, and will enable soundly based judgments to be made as to the qualitative and quantitative nature of the hazards from nuclear testing. The Assembly also set up, by unanimous agreement, a special committee of 24 countries, including Canada, to consider further the problems of international co-operation in the peaceful uses of outer space. This committee replaces the previous one approved in 1958 but on which the U.S.S.R. had declined to participate because it considered the membership unsatisfactory.

The Assembly gave its attention to such continuing problems as Chinese representation, Hungary, Algeria, UNRWA, trusteeship questions, economic aid for under-developed countries and UNEF financing. The Assembly decided that at the fourteenth session there should be no discussion of the question of the representation of China. The discussion on Hungary coincided with reports of new repressive measures about which Canada expressed considerable concern. The Assembly "deplored" the failure of the U.S.S.R. and Hungary to honour previous United Nations resolutions which had called for the withdrawal of Soviet troops from Hungary and the admission of a United Nations representative to survey the situation there; it called on both nations to co-operate now. A resolution on Algeria which had general support from African and Asian members failed to get the required two-thirds majority. The Assembly extended for three years the life of the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA) and re-affirmed the right of the refugees to repatriation in Israel. On UNEF financing, the Assembly adopted a new scale of assessments for the annual \$20,000,000 required, which cut the assessment on smaller countries and put more emphasis on voluntary contributions from wealthier countries.

Security Council.—The year 1959 was the second of Canada's latest two-year term on the Security Council. In that year the Council was considerably less occupied than in 1958, only one question, concerning Laos, being formally discussed. Elections in the General Assembly for the non-permanent members of the Council for the period 1960-61, however, constituted a major problem which was resolved only with considerable difficulty.

At the request of the Secretary-General, the Council, on Sept. 7, considered the appeal, which had been addressed directly to Mr. Hammarskjöld by the Laotian Government, for a United Nations emergency Force to halt alleged military aggression in Laos by North Viet Nam and to prevent it from spreading. To avoid being paralyzed by the veto, the Council then adopted—as a procedural matter not subject to the veto, and by a vote of ten to one—a resolution which established a sub-committee of the Security Council under Article 29 of the Charter to "conduct such enquiries as it may determine necessary and to report to the Security Council as soon as possible". Argentina, Italy, Japan and Tunisia were named as members of the sub-committee which left New York for Laos on Sept. 12 and returned on Oct. 21 to report on its fact-finding mission; alternate representatives remained in Laos. Although the findings of the committee were not completely conclusive, the Secretary-General felt it useful to go to Laos personally and subsequently

left a personal representative there. As a result, some measure of stability seemed to be obtained in the area and no further meeting of the Security Council was considered necessary.

Japan's seat on the Security Council, which was to be vacated at the end of 1959, was contested strongly by Poland and Turkey. The U.S.S.R. took the view that, although an Eastern European country had not consistently held a seat on the Council, it was understood by a "gentleman's agreement" of 1946 that one of the six non-permanent seats should go to an Eastern European member. Canada indicated sympathy for the Polish candidature. At the end of the session of the General Assembly, and after 52 ballots, a compromise was accepted by which the two candidates would divide the two-year term.

Economic and Social Council (ECOSOC).—In the period under review, the Economic and Social Council held its resumed twenty-sixth and its twenty-seventh and twenty-eighth sessions. In 1958, Canada completed its third three-year term of office on the Council; Dr. G. F. Davidson, Deputy Minister of Welfare in the Department of National Health and Welfare, was President of the Council for the year. During 1959, Canada was a member of five of the Council's eight functional commissions—Status of Women, Narcotic Drugs, International Commodity Trade, Statistical, and Population. Canada will continue in 1960 to serve on all of these except the Statistical Commission. Although not a member of the Economic and Social Council, Canada was represented at the twenty-seventh session by an official observer.

Ever since the United Nations was established, its ten Specialized Agencies have been the chief instruments through which member States have pooled their efforts in trying to achieve the goals of higher standards of living, full employment and conditions of economic and social progress. Canada is a member of all the United Nations Specialized Agencies, and has worked to encourage and develop their programs.* The opportunities for useful and desirable work by the Agencies are unlimited, but since the funds available to them are not, the Council has sought to obtain maximum effect by co-ordinating their activities and by encouraging the application of a system of priorities for their programs. Canada has taken an active part in this phase of the work of the Council and, particularly, has recommended that the Agencies stimulate and support national efforts rather than engage in direct operations.

The Convention of the Intergovernmental Maritime Consultative Organization (IMCO) stipulated that 21 nations, of which seven should each have a total tonnage of not less than 1,000,000 gross tons, must signify their acceptance before this new Specialized Agency could officially come into being. With the deposit of instruments of ratification by Japan and the United Arab Republic on Mar. 17, 1958, the Convention on IMCO came into force. Canada was the first country to ratify the Convention, having done so on Oct. 15, 1948. The purpose of IMCO is to promote co-operation among governments in international shipping problems. Among the international problems with which it has to deal are the safety of life at sea, the prevention of collisions at sea, and the prevention of the pollution of the sea by oil. A conference to amend the International Convention on Safety of Life at Sea, 1948, will be held in London under IMCO auspices in 1960.

In addition, there came into existence on July 29, 1957 the International Atomic Energy Agency (IAEA). This body, though not technically one of the Specialized Agencies, is, like them, an autonomous international organization under the aegis of the United Nations. The provisions of the Statute of the International Atomic Energy Agency concerning both designation and election to the Board of Governors specified several categories of membership, including the selection as designated members of "the five members most advanced on the technical aspects of atomic energy, including the production of source materials". Canada, France, the United Kingdom, the United States and the Soviet Union achieved membership on the Board in this category.

* Canada's activities in connection with three of these Specialized Agencies—United Nations Educational, Scientific and Cultural Organization, Food and Agriculture Organization and International Labour Organization—are dealt with elsewhere in this volume. See Index.

The Economic and Social Council, at its twenty-sixth session held in Geneva during the month of July 1958, discussed United Nations activities in the field of economic assistance to under-developed countries. It adopted a resolution recommending to the General Assembly the establishment of a Special Fund which would enlarge the scope of the existing United Nations programs of assistance to include special projects in certain basic fields, such as extensive surveys of water, mineral and potential power resources, and the creation of training institutes in public administration, statistics and technology, and of agricultural and industrial research and productivity centres. The General Assembly approved the Council's recommendations and the Special Fund came officially into being on Jan. 1, 1959. The Canadian Government contributed \$2,000,000 to the Fund in 1959 and will seek Parliamentary approval for a further \$2,000,000 contribution in 1960. Canada has been elected as a member of the Governing Council of the Special Fund, to hold office for three years from Jan. 1, 1960.

For many years the United Nations and its Specialized Agencies have conducted special programs of assistance to overcome certain acute problems and serious deficiencies that exist in various areas. Money for these programs is not available through the regular United Nations budget nor through the regular budgets of the Specialized Agencies (these regular budgets are raised by assessing all member States, the scale of assessment being based mainly on gross national product) but must be raised from voluntary contributions made by member states. At present the United Nations is sponsoring four special programs: the United Nations Expanded Programme of Technical Assistance (ETAP); the United Nations Children's Fund (UNICEF); the United Nations Relief and Works Agency for Palestine Refugees in the Near East (UNRWA); and the program of the United Nations High Commissioner for Refugees (UNHCR, formerly UNREF). Canada's contributions in 1959 were: \$650,000 to UNICEF; \$500,000 to UNRWA (plus a special contribution of \$1,500,000 worth of wheat flour); \$290,000 to the programs of the UNHCR; and \$2,000,000 to ETAP. Canada intends, subject to Parliamentary approval, to make similar regular contributions in 1960.

In 1958 the United Nations designated the period June 1959 to July 1960 as World Refugee Year and urged members to make an extra effort to help solve this problem. As a special contribution to World Refugee Year, Canada announced that it would admit 100 tuberculous refugees, with their families, for treatment and rehabilitation in Canada. The cost of this program for the initial year is estimated to be \$750,000 with substantial expenditures expected in succeeding years before the families are completely rehabilitated.

Canada has also announced its intention to seek Parliamentary approval for a contribution in the amount of \$100,000 to the Malaria Eradication Special Account of the World Health Organization for 1960. This voluntary fund was established in 1956 when the World Health Organization launched a campaign for the world-wide eradication of malaria. It is used to provide technical advice and assistance to countries undertaking national programs of malaria eradication.

Canada made a voluntary contribution of \$50,000 to the operational fund of the International Atomic Energy Agency with provision for a further \$25,000 if justified by the response from other members. Canada was also the first nation to make a free gift of approximately three tons of natural uranium metal to the Agency, which sold it to Japan. In addition, Canada paid an annual assessment to the United Nations, to some of the Specialized Agencies and to the International Atomic Energy Agency totalling about \$3,441,000 in 1959. Canada's share of the normal administrative budget of the United Nations proper for 1959 was at the rate of 3.11 p.c., or \$1,666,896.

Trusteeship Council.—The Trusteeship Council supervises the administration of the agreements between the United Nations and the member States of the United Nations which have responsibility for trust territories. The Council held two regular sessions, the twenty-third in January–March 1959 and the twenty-fourth in June–August 1959. It also held two special sessions, one in October 1958 and the other in November 1959.

At the end of October 1959, the membership of the Council consisted of the seven States which administer trust territories (Australia, Belgium, France, Italy, New Zealand, United Kingdom and United States), and an equal number of non-administering States. Always included in the latter group are the two permanent members of the Security Council—the U.S.S.R. and China—which do not administer trust territories. The other five non-administering countries were Burma, Haiti, India, Paraguay and the United Arab Republic.

During its regular sessions the Council considered reports from the administering authorities for Tanganyika under United Kingdom administration, Ruanda-Urundi under Belgian administration, Somaliland under Italian administration, the Cameroons under United Kingdom administration, the Cameroons under French administration, Togoland under French administration, Western Samoa under New Zealand administration, New Guinea under Australian administration, and Nauru under combined Australian, New Zealand and United Kingdom administration. In addition to considering the political, economic, social and educational progress made in the territories, the Council discussed the attainment by the trust territories of the objective of self-government or independence. Special attention was paid to study and training facilities for the inhabitants of the territories, economic aid for Somaliland and the effects of the European Economic Community on the development of certain of the territories.

During the review period, United Nations travelling missions visited the trust territories in West Africa, the trust territory of Western Samoa, and the trust territories of Nauru, New Guinea and the Pacific Islands. The reports of these missions were also considered by the Council. The Council learned that in 1960 three trust territories would achieve their independence: the French Cameroons on Jan. 1, Togoland on Apr. 27, and Somaliland on July 1. Plebiscites under a United Nations Commissioner were agreed upon for the Northern Cameroons in November 1959, and for the Southern Cameroons in the spring of 1961, in order to ascertain the desires of the inhabitants of these territories with regard to their future status after Nigeria attains its independence in October 1960.

The Council's Committee on Petitions considered more than 12,000 communications from petitioners and the Council itself granted oral hearing to petitioners from various territories under its tutelage.

Canadian policy with regard to trust territories is based on the belief that careful and unprejudiced consideration should be given both to the aspirations and legitimate demands of the indigenous populations and to the responsibilities and legitimate rights of the administering authorities. In the Canadian view, it is the responsibility of the General Assembly to decide broad policy matters and of the Trusteeship Council to plan its work and decide on the most expeditious manner of fulfilling its detailed responsibilities under the international trusteeship system.

International Court of Justice.—To "adjust and settle international disputes in conformity with Justice and International Law" is one of the purposes of the United Nations and it was therefore essential to establish a judicial arm for the Organization. The Statute of the International Court of Justice is an integral part of the Charter of the United Nations. All members of the United Nations are *ipso facto* parties to the Statute of the Court. A State that is not a member of the United Nations may, nevertheless, become a party to the Statute of the Court on conditions to be determined in each case by the General Assembly upon the recommendation of the Security Council. Thus, at the end of 1959, the total number of parties to the Statute was 85; 82 were members of the United Nations and three (Liechtenstein, San Marino and Switzerland) were non-members. The Court is composed of 15 judges who are elected in individual capacities. His Honour Judge John E. Read of Canada served on the Court from his election to the Court in 1946 until his retirement in 1958. No judge of Canadian nationality is serving on the Court at the present time.

Subsection 3.—Canada and the North Atlantic Treaty Organization

Within less than two years of the end of World War II in 1945 and the establishment of the United Nations, hopes of a lasting peace gave place to growing anxiety. The United Nations Security Council, which had been given responsibility for maintaining world-wide security, was deliberately prevented by the U.S.S.R. representatives from fulfilling this function. The Soviet Union maintained its armed forces after the War at a level that ensured to itself a preponderance of military strength in Europe. The Soviet Government blocked attempts by the Western Powers to reach a peace settlement in Europe and communist parties were used as an instrument of Soviet policy to sabotage Western European efforts at economic recovery and political co-operation. Under these circumstances, the countries of the Atlantic community felt themselves in grave peril of Soviet aggression and communist subversion and therefore took special collective measures under the United Nations Charter to maintain peace.

The first step in this direction was taken in the spring of 1948 when Belgium, France, Luxembourg, the Netherlands and the United Kingdom signed the Brussels Treaty establishing Western Union. On Apr. 4, 1949, as a result of negotiations between these countries and Canada and the United States, the North Atlantic Treaty was signed at Washington, D.C. This Treaty was accepted by all major groups of opinion in Canada and was passed without a single dissenting vote in Parliament.

The original signatories of the Treaty were Belgium, Canada, Denmark, France, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, the United Kingdom and the United States. In September 1951 it was agreed that Greece and Turkey should be invited to accede to the Treaty and they were admitted in February 1952. In October 1954 a protocol to the North Atlantic Treaty inviting the Federal Republic of Germany to join NATO was approved together with related arrangements which provided for the establishment of a Western European Union (composed of the Brussels Powers, the Federal Republic of Germany, and Italy) and for the restoration of full sovereignty to the Federal Republic of Germany. These measures, designed to bring the Federal Republic of Germany into close and enduring association with the Atlantic Community of free nations, were adopted following the failure of the European Defence Community Treaty which was rejected by the French Assembly in August 1954. On May 6, 1955, the Federal Republic of Germany deposited in Washington its instrument of accession to the North Atlantic Treaty and thus joined NATO as its fifteenth member.

The terms of the Treaty and the organization of the Council and subordinate committees are dealt with in the 1954 Year Book at pp. 113-115. Developments up to mid-1958 are given in the 1955, 1956, 1957-58 and 1959 editions.

Developments during 1958-59.—The North Atlantic Council continued in permanent session at Paris under the chairmanship of the Secretary-General, Mr. Paul-Henri Spaak. In October 1958, Mr. Jules Léger, the former Under-Secretary of State for External Affairs, succeeded Mr. L. D. Wilgress as Permanent Representative of Canada to the North Atlantic Council.

During the period under review, five Ministerial meetings of the Council were held. In April 1958 a special meeting of Defence Ministers was convened in Paris to review the implementation of the important decisions taken in the defence field by the NATO Heads of Government at their meeting the previous December. In May, the Foreign Ministers of the NATO countries met in Copenhagen to discuss various political and economic problems of concern to the Alliance and, in particular, the important questions relating to a possible East-West Summit conference.

The annual meeting of the Foreign, Defence and Finance Ministers of the member countries was convened in Paris in December 1958. The serious situation created by the Soviet Union in announcing its intention of abrogating unilaterally the four-power agreements on Berlin was fully examined. Agreement was reached on the basis of the results of the Dec. 15 meeting of the Foreign Ministers of the United States, the United Kingdom,

France and the Federal Republic of Germany which found the Soviet proposal of Nov. 27 on Berlin unacceptable and reaffirmed the determination of the three Western occupying powers to maintain their position and rights in Berlin, including the right of access to the city. In addition, after hearing reports by NATO military commanders on the strength of NATO Forces and the continuing increase in Soviet armaments, the Ministers emphasized the vital need to improve the defensive power of the Alliance.

Two Ministerial meetings of the Council were convened during 1959. The regular spring meeting of Foreign Ministers was held in Washington on Apr. 2-4. A special ceremony at the opening session marked the tenth anniversary of the Treaty, which was signed in Washington on Apr. 4, 1949. The Council directed its attention to the central problem posed by the Soviet Union's pronouncements on Berlin and Germany. Discussion centred mainly on the Western position for the negotiations with the Soviet Union scheduled to commence at Geneva later in the spring, upon which there was general agreement. The Ministers expressed desire to see outstanding problems solved by negotiation and confirmed the principles contained in the Council's declaration on Berlin of Dec. 16, 1958.

The year's work of the Council culminated with the meeting of the Foreign, Defence and Finance Ministers held in Paris Dec. 15-17 and again on Dec. 22 following a meeting during the intervening period of the Heads of Government of the United States, the United Kingdom, France and the Federal Republic of Germany to consider preparations for an East-West Summit conference. In addition, the Foreign Ministers of the United States, the United Kingdom, France, Italy and Canada met on Dec. 21 to discuss arrangements for convening the Ten-Nation Disarmament Committee. The NATO Ministerial meeting was therefore concerned not only with its traditional review of the international situation and current NATO defence problems but with the more important matters relating to the forthcoming East-West Summit negotiations and preparation for negotiations with the Soviet Union on disarmament, both in the ten-nation Disarmament Committee and at the Summit. Agreement was reached on the arrangements for convening the Summit conference and the meetings of the Disarmament Committee, and for ensuring that there would be full consultation with NATO in preparing the Western position for these meetings.

In addition, the Permanent Council, together with its subordinate committees and its international staff, continued to devote its attention to international, political, economic and military developments of direct concern to the Alliance, reviewed the defence plans of its members, dealt with expenditures of funds on commonly financed military installations (infrastructure) and studied the measures required to ensure peacetime readiness and civil defence.

Canadian Contributions to NATO.—Canada continued in 1958-59 to provide contributions of Armed Forces to unified NATO commands, material assistance to other NATO countries and financial contributions to NATO common budgets. The Canadian contribution to the integrated forces in Europe comprised an Infantry Brigade Group stationed in Germany and an Air Division of twelve modern jet fighter squadrons at bases in France and Germany. During 1959 the Canadian Government decided to re-equip the eight day-fighter squadrons of the Air Division with a modern strike and reconnaissance aircraft, the CF-104. With the establishment of the North American Air Defence Command (NORAD) in 1958, Canada participated fully with the United States in the defence of the North American Continent, which harbours the main retaliatory forces of the Alliance and is an integral part of the NATO area. In addition, a substantial part of Canada's naval forces has been assigned to the Supreme Allied Commander Atlantic (SACLANT) for the protection of convoys and for the defence of the Canada-United States region, should an emergency arise.

Canada continued to provide assistance to NATO European countries in the form of military equipment, aircrew training, logistic support for material previously transferred, and contributions to NATO military and common infrastructure budgets. Approximately \$1,700,000,000 has been allocated for these purposes since 1950. After a peak of \$289,000,000 in 1953-54, the annual dollar value of the Canadian Mutual Aid Program declined to an estimated \$90,000,000 for the year ended Mar. 31, 1960. This decline was accounted for by the gradual depletion of Canadian surplus stocks of weapons and equipment, and by the successful completion in July 1958 of the full-scale NATO Air Training Plan carried out at RCAF establishments in Canada; under this training plan, started in 1950, over 5,500 pilots and navigators from ten member countries have been graduated. A limited number of aircrew from European countries are continuing their training in Canada under special agreements.

While changing conditions and requirements have gradually altered the magnitude and content of Canada's Mutual Aid Program, it continues to play an important role in the build-up of NATO military strength.

Subsection 4.—Canada and the Colombo Plan

The Colombo Plan for Co-operative Economic Development in South and South-east Asia was conceived at the Commonwealth Meeting of Foreign Ministers held at Colombo, Ceylon, Jan. 9-14, 1950. Although the Colombo Plan was initiated by Commonwealth Governments, it is not exclusively a Commonwealth program. It is designed to assist in the economic development of all countries and territories in the general area of south and southeast Asia. Its membership now includes Australia, British Borneo (North Borneo, Brunei and Sarawak), Burma, Cambodia, Canada, Ceylon, India, Indonesia, Japan, Laos, Malaya, Nepal, New Zealand, Pakistan, the Philippines, Singapore, Thailand, the United Kingdom and Viet Nam, as well as the United States which is also engaged in a substantial program of economic aid in the same region.

The Colombo Plan is essentially a bilateral program, but a Consultative Committee of Foreign Ministers of the member countries meets once a year to review projects, exchange views on policy matters and prepare an annual report. It is, as its name implies, a "consultative" body; no collective policy decisions binding member countries are taken by its meetings. To develop the technical assistance side of the Plan, a Council for Technical Co-operation, on which Canada is represented, meets regularly in Colombo.

From the beginning of the Plan in 1950 through April 1960, Canada will have made available a total of \$281,670,000 for capital and technical assistance projects in south and southeast Asia. At the Commonwealth Trade and Economic Conference held at Montreal in September 1958, Canada announced an increase from \$35,000,000 to \$50,000,000 in its annual contribution to the Colombo Plan over the following three years. In addition, Canada announced its intention to continue substantial financial assistance to less-developed countries in the form of loans and grants for Canadian wheat and flour.

While eleven separate countries have received capital assistance from Canada, the largest contributions so far have been made in India, Pakistan and Ceylon. The Canadian contribution has consisted primarily of direct assistance to various development projects (equipment for multi-purpose irrigation and hydro-electric projects, the Canada-India NRX atomic reactor, transportation equipment, fishing boats and surveys of resources). It has also included goods (wheat, flour, copper, aluminum and railway equipment) which the recipient governments have used as a means of raising some of the money needed to meet local costs of development programs. Canadian aid has been helping these countries to develop their economies and to raise their standards of living.

Under the Technical Assistance Programme, 1,308 persons from member countries had been received, up to Dec. 31, 1959, for training in Canada in a great variety of technical fields; 140 Canadian experts had been sent abroad for service in Colombo Plan countries in such fields as fisheries, refrigeration, marine biology, agriculture, soil erosion,

vocational training, accountancy and the maintenance of tractors and agricultural machinery. Other Canadian experts had been employed on aerial resources survey teams and in the installation and operation of capital equipment. Equipment for technical training in various fields had also been supplied.

The Consultative Committee of the Colombo Plan held annual meetings at Seattle, U.S.A., in 1958 and at Jogdjakarta, Indonesia in November 1959. At the Jogdjakarta meeting, Singapore was admitted to full membership in the Colombo Plan and it was agreed that the Plan should be extended to June 1966. Reports of the Committee on progress and future plans are published after each annual meeting; each report also contains sections describing the activities of member countries.

CHAPTER III.—POPULATION*

CONSPECTUS

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NOTE.—The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

This Chapter presents only a limited summary of the voluminous data on population recorded by the censuses of Canada. More detailed information and extended analyses are published in the Census volumes and bulletins, which are obtainable from the Queen's Printer or the Dominion Bureau of Statistics, Ottawa. A list of such publications and their prices is available on request.

Section 1.—Census of Population

Subsection 1.—History of the Census

A brief account of the early censuses of Canada is given under this heading in the 1956 Year Book at pp. 146-149. More detailed information on the history of census-taking in Canada may be found in Vol. XI (Administrative Report) of the 1951 Census of Canada, in the Administrative Report of the 1941 Census of Canada, and in Vol. I of the 1931 Census of Canada.

Plans for the 1961 Census.—On June 1, 1961, Canada's decennial nation-wide inventory—the Tenth Decennial Census since Confederation—will get under way. On that day, some 25,000 trained enumerators will start on their rounds of visitation. Planning for the huge task of obtaining accurate information on Canada's people, the homes they live in and the farms and businesses they operate, was started in July 1957 and since then the details of organization have been progressively settled. Decisions on the content of the census questionnaires have also required months of planning. Studies have been conducted on the costs and usefulness of various types of information requested for inclusion in the census; the views of users of census statistics have been secured by canvass to ensure that the inquiries will be limited to information of greatest demand and importance; field tests have been carried out to determine the feasibility of certain questions, the arrangement of the questionnaires, and the wording of inquiries; and studies have been made on the possibilities of employing sampling techniques in the collection of the census information.

* Revised in the Census (Demography) Division, Dominion Bureau of Statistics.

The over-all planning for the 1961 Census is being conducted in the Dominion Bureau of Statistics under the direction of the Census Executive Committee, with the Dominion Statistician as chairman. A number of working committees have been made responsible for the planning in particular fields such as field organization, publicity, training, population, housing, agriculture, tabulation, etc. They report their recommendations regularly to the Executive Committee.

Unlike the modified Census of 1956, taken mid-way between the Decennial Censuses to obtain very basic information on population and agriculture in a period of rapid population growth and far-reaching changes in the agricultural economy, the 1961 Census will parallel in scope the more detailed Censuses of 1951 and 1941. Coverage problems, however, will be considerably greater because the population will have increased by more than 4,000,000 since the 1951 Census, and by close to 7,000,000 since the 1941 Census.

Briefly, the Population Census of 1961 will inquire into the age, sex, marital status, birthplace, period of immigration, citizenship, origin, religion, language, mother tongue and schooling of each person. Economic characteristics will be obtained for persons 15 years of age or over, such as occupation, industry, class of worker and earnings of wage-earners. Males 25 years of age or over will be asked if they had any wartime service in the Armed Forces. Persons in every fifth (or sample) household will be asked their place of residence five years ago, and women in these sample households who have ever been married will be asked their date of marriage and the number of live-born children they have had during marriage. Persons in receipt of income other than wages or salaries in non-farm sample households will be asked the amount of such income during the 12 months preceding the census date.

The Housing Census for 1961 will be taken on a sample basis of every fifth household, as in 1951. Greater emphasis is being placed on obtaining data relating to the physical and structural characteristics of dwellings than in the preceding census. Inquiries will include types and conditions of dwellings; tenure and length of residence; numbers of rooms and bedrooms; water supply; bath, toilet and sewage facilities; home values, rents and mortgages; and such household facilities as heating equipment and fuel used, refrigerators, freezers, television sets and automobiles.

The Census of Agriculture will collect detailed information on the operation of Canada's farms and small agricultural holdings. Inquiries will be included on sizes of holdings, tenure, land use, crop acreages, numbers and kinds of livestock, and numbers and types of farm machinery and equipment. An important feature will be the classification of farms by economic class and type. A special questionnaire will be used to obtain information on wood products taken from farm woodlands, and one for reporting irrigation on farms in certain provinces.

The field enumerators gathering data on population, housing and agriculture will be utilized, as in the past three decennial censuses, to provide a list of all business firms coming within the scope of retail, wholesale and service establishments. Because of the complexity of business operations, information for the Census of Distribution will be obtained by means of questionnaires mailed from the Bureau to the firms listed by the census enumerators. They will include such questions as sizes and types of businesses, volumes of sales by commodity classes, stocks on hand, numbers of employees and amounts of payrolls.

Plans for the processing and tabulation of the 1961 Census results are being geared to the installation in the Dominion Bureau of Statistics building of an advanced type of electronic data-processing machine. This machine will perform most of the editing requirements (i.e., the searching of tape records of the census questionnaires for omissions and inconsistencies) as well as the operations required for the census tabulations. A high-speed printer operated in conjunction with the computer will print the tabulated results. Programming of the tabulations planned for the 1961 Census has been under way since the autumn of 1959 so that the full capacities of the computer may be utilized as soon as enumeration returns are received from the field offices.

Extensive use will be made of the Bureau's eight Regional Statistics Offices for the administration of the field work and for the initial checking and processing of the census returns. It was found in the 1951 and 1956 Censuses that decentralization of such early operations following the field enumeration resulted in important time and cost savings.

Results of the 1961 Census will begin to appear within a few months after the census date of June 1. The first to be issued will be preliminary population totals for all cities, towns, villages and rural municipalities. Final counts of population (after adjustments for temporary residents, persons missed by enumerators, etc.) will be issued for Canada and the provinces, counties, cities and towns, etc., early in 1962. These will be followed by basic distributions of the population such as age, sex, marital status and so on, and at about the same time the results of the Censuses of Agriculture and Housing will be becoming available. From then on, a great wealth of detailed statistical information on Canada's people, homes, farms and businesses as at mid-1961 will be on record for multitudes of users; another inventory of Canada's human and material resources will have been compiled to form a background of factual knowledge for the conduct of the nation's affairs.

Subsection 2.—Growth and Density of the Population

The population history of Canada, from the first census in 1666 when 3,215 persons were enumerated to the 1956 Census when the figure was 16,080,791, reveals an outstanding rate of population growth. Although each census period contributed to this growth, the periods 1901-11, 1911-21, 1941-51 and 1951-56 merit particular mention.*

In the first half of the present century, Canada's population increased from 5,371,315 at the beginning of the period to just over 14,000,000 in 1951, or to 13,648,013 if Newfoundland is excluded. In the thirty years up to 1931 the population almost doubled and between 1931 and 1951 another 3,600,000 was added. The most rapid growth took place in the first decade of the century when the population increased by 1,835,000 and the rate of growth was slightly over one-third. Coincident with the settlement of the western provinces, substantial immigration characterized the whole period from the beginning of the century up to the outbreak of World War I: immigrants entering Canada during the first ten years of this period numbered 1,644,147.

Owing partly to the sharp falling off in immigration during the war years and partly to heavier emigration, the rate of increase of Canada's population in the decade 1911-21 was less than in the previous decade; nevertheless total population advanced by 1,581,000 or about 22 p.c. It should be mentioned that, largely because of the record volume of immigration between 1911 and the outbreak of war, the actual number of immigrants to Canada during this decade was slightly greater than during the period 1901-11, although in terms of total population at the beginning of each of these periods immigration was a relatively less important factor in population growth in the decade 1911-21.

Population growth between 1921 and 1931 was approximately 1,590,000 or only slightly greater than in the previous decade. The rate of increase, at 18 p.c., was less than in the period 1911-21 and only a little more than half the rate recorded in the first decade of the century. Also it is significant that the rate of population growth in Eastern Canada was much closer to the rate of growth in Western Canada than in the period 1901-21. In the decade 1931-41 Canada's population increase, at 11 p.c., was the lowest recorded. Immigration over this decade was not much more than 150,000 or only about one-tenth of the number in each decade since 1901. The depressed conditions existing throughout most of the decade also resulted in a sharp falling off in marriages and in births. As a result, only 1,130,000 persons were added to the population of Canada over this ten-year period.

Despite the almost complete cessation of immigration during World War II, the decade 1941-51 was marked by a record growth in population numbers. Excluding Newfoundland, the increase amounted to 2,141,000. The rate of growth was just over

* An outline of the growth of population in Canada since the beginning of the seventeenth century may be found in Vol. I of the 1931 Census. Other accounts of population growth prior to the present century are included in Vol. I of the 1941 Census and Vol. X of the 1951 Census.

18 p.c. or about the same rate as was recorded in the census decade following World War I. Including Newfoundland, the rate of growth of the Canadian population in the period 1941-51 was 22 p.c., raising the Canada total as of June 1, 1951 to just over 14,000,000.

During the first five years of the second half of the present century Canada experienced an outstanding development of its economic resources. Reflecting this expansion, population, which in the ten years preceding the 1956 Census had risen by 3,374,000 or 27.4 p.c.,* continued to increase at a high rate over the years between the 1951 and 1956 Censuses. Slightly more than 2,000,000 persons were added to the population of Canada in this period, a 14.8-p.c. increase in five years, raising the total population to 16,080,791 on June 1, 1956. Net immigration accounted for almost 30 p.c. of the total increase in population since the 1951 Census, and natural increase for slightly over 70 p.c. In no comparable period of time in the past was the absolute size of net immigration as large as in this five-year period. In terms of the relative contribution of net immigration to population growth, only in the first decade of the century—when it accounted for 40 p.c. of the total population increase—did this element play a more important role than in the years since 1951.†

The record of population growth by provinces since 1901 given in Table 1 indicates the rapid expansion that took place in the Prairie Provinces up to 1921 and the slowing down in growth that followed during the 1920's and was greatly accentuated during the period 1931-56. It also shows that the Maritime Provinces as a group showed only a slight gain in population between 1901 and 1931—Prince Edward Island actually losing about 15,000 people over this period—and although a somewhat greater growth was experienced from 1931-51, another slow down occurred between the latter year and 1956; that the rate of population increase in Quebec by decades over the fifty years 1901-51 was consistently greater than in Ontario, the larger gains in the latter province resulting from net migration being more than offset by the higher rate of natural increase in Quebec, but that Ontario had taken the lead by 1956; and that the population of British Columbia recorded consistent and, in some decades, spectacular growth.

* Exclusive of Newfoundland since this province did not come into Confederation until 1949.

† More detailed information on the elements of population growth may be found in 1956 Census Report No. 3-1 *Growth of Population in Canada*. See also Section 2, pp. 195-197 for Intercensal Surveys.

1.—Numerical Distribution of Population by Province, and Percentage Change from Preceding Census, Decennial Census Years 1901-51 and 1956

NOTE.—Populations for the decennial census years 1871, 1881 and 1891 are given in the 1956 Year Book, p. 149. The populations of the Prairie Provinces in 1906, 1916, 1926, 1936 and 1946 will be found in the 1951 edition, p. 131.

Province or Territory	1901	1911	1921	1931	1941	1951	1956
NUMERICAL DISTRIBUTION							
Newfoundland.....	1	1	1	1	1	361,416	415,074
Prince Edward Island..	103,259	93,728	88,615	88,038	95,047	98,429	99,285
Nova Scotia.....	459,574	492,338	523,837	512,846	577,962	642,584	694,717
New Brunswick.....	331,120	351,889	387,876	408,219	457,401	515,697	554,616
Quebec.....	1,648,898	2,005,776	2,360,510	2,874,662	3,331,882	4,055,681	4,628,378
Ontario.....	2,182,947	2,527,292	2,933,062	3,431,683	3,787,655	4,597,542	5,404,933
Manitoba.....	255,211	461,394	610,118	700,139	729,744	776,541	850,040
Saskatchewan.....	91,279	492,432	767,510	921,785	895,992	831,728	880,665
Alberta.....	73,022	374,295	588,454	731,605	796,169	939,501	1,123,116
British Columbia.....	178,657	392,480	524,582	694,263	817,861	1,165,210	1,398,464
Yukon.....	27,219	8,512	4,167	4,230	4,914	9,096	12,190
Northwest Territories..	20,129	6,507	8,143	9,316	12,028	16,004	19,313
Canada.....	5,371,315	7,206,643	8,787,949²	10,376,786	11,506,655	14,009,429	16,080,791

For footnotes, see end of table.

1.—Numerical Distribution of Population by Province, and Percentage Change from Preceding Census, Decennial Census Years 1901-51 and 1956—concluded

Province or Territory	1901	1911	1921	1931	1941	1951	1956
PERCENTAGE CHANGE FROM PRECEDING CENSUS							
Newfoundland.....	1	1	1	1	1	1	14.8
Prince Edward Island..	-5.3	-9.2	-5.5	-0.7	8.0	3.6	0.9
Nova Scotia.....	2.0	7.1	6.4	-2.1	12.7	11.2	8.1
New Brunswick.....	3.1	6.3	10.2	5.2	12.0	12.7	7.5
Quebec.....	10.8	21.6	17.7	21.8	15.9	21.7	14.1
Ontario.....	3.2	15.8	16.1	17.0	10.4	21.4	17.6
Manitoba.....	67.3	80.8	32.2	14.8	4.2	6.4	9.5
Saskatchewan.....	—	439.5	53.8	21.7	-2.8	-7.2	5.9
Alberta.....	—	412.6	57.2	24.3	8.8	18.0	19.5
British Columbia.....	82.0	119.7	33.7	32.3	17.8	42.5	20.0
Yukon.....	—	-68.7	-51.2	1.8	16.2	85.1	34.0
Northwest Territories..	-79.7	-67.7	25.1	14.4	29.1	33.1	20.7
Canada.....	11.1	34.2	21.9	18.1	10.9	21.8	14.8

¹ Populations of Newfoundland (not part of Canada until 1949) were: 1901, 220,984; 1911, 242,619; 1921, 263,033; 1931, 281,500 (estimated); 1941, 303,300 (estimated); and 1945, 321,819. ² Includes 485 members of the Royal Canadian Navy recorded separately in 1921.

The land area and density of the population per square mile is given by province in Table 2 for census years 1931, 1941, 1951 and 1956. It will be noted that the figures for 1951 and 1956 include the Province of Newfoundland, a fact that should be kept in mind in comparisons with earlier censuses.

2.—Land Area and Density of Population, by Province, Decennial Census Years 1931-51 and 1956

NOTE.—Certain population density figures in this table have been revised since published in Census Reports, as a result of changes in land areas.

Province or Territory	Land Area in Sq. Miles	Population, 1931		Population, 1941		Population, 1951		Population, 1956	
		Total	Per Sq. Mile	Total	Per Sq. Mile	Total	Per Sq. Mile	Total	Per Sq. Mile
Newfoundland ¹	143,045	...	...	...	...	361,416	2.53	415,074	2.90
Prince Edward Island..	2,184	88,038	40.31	95,047	43.52	98,429	45.07	99,285	45.46
Nova Scotia.....	20,402	512,846	25.14	577,962	28.33	642,584	31.50	694,717	34.05
New Brunswick.....	27,835	408,219	14.67	457,401	16.43	515,697	18.53	554,616	19.93
Quebec.....	523,860	2,874,662	5.49	3,331,882	6.36	4,055,681	7.74	4,628,378	8.84
Ontario.....	344,092	3,431,683	9.97	3,787,655	11.01	4,597,542	13.36	5,404,933	15.71
Manitoba.....	211,775	700,139	3.31	729,744	3.45	776,541	3.67	850,040	4.01
Saskatchewan.....	220,132	921,785	4.19	895,992	4.07	831,728	3.78	880,665	4.00
Alberta.....	248,800	731,605	2.94	796,169	3.20	939,501	3.78	1,123,116	4.51
British Columbia.....	359,279	694,263	1.93	817,861	2.28	1,165,210	3.24	1,398,464	3.89
Canada (Exclusive of the Territories).....	2,101,454	10,363,240	5.29²	11,489,713	5.87²	13,984,329	6.65³	16,049,288	7.64³
Yukon Territory.....	205,346	4,230	0.02	4,914	0.02	9,096	0.04	12,190	0.06
Northwest Territories..	1,253,438	9,316	0.01	12,028	0.01	16,004	0.01	19,313	0.02
Canada.....	3,560,238	10,376,786	3.04⁴	11,506,655	3.37⁴	14,009,429	3.93³	16,080,791	4.52³

¹ Includes Labrador. ² Calculated on the basis of 1,958,409 sq. miles which excludes the land area of Newfoundland. ³ Includes Newfoundland. ⁴ Calculated on the basis of 3,417,193 sq. miles which excludes the land area of Newfoundland.

Subsection 3.—Rural and Urban Population

Before 1951 the population residing within the boundaries of all incorporated cities, towns and villages of a province was classified by the census as urban and the remainder as rural. Since the laws governing incorporation vary among provinces, there was no uniform line of demarcation between the rural and urban population throughout Canada. In the 1951 Census the aggregate number of residents within a given area, rather than provincial legal status, was the main criterion for the rural-urban classification. The population residing in cities, towns and villages of 1,000 or over, whether incorporated or unincorporated, as well as the population of all parts of census metropolitan areas, was defined as urban and that outside such localities as rural. The 1956 Census definition was substantially the same as that used in the Census of 1951 except that the fringe parts of other major urban areas were classed as urban.

A change in the composition of urban size groups was made also for the 1956 Census. At the 1951 Census, each municipality located within the boundaries of a census metropolitan area was allocated to an urban size group according to its own individual size. In 1956, each such municipality was classified to the same urban size group as the total metropolitan area of which it formed a part. In addition, the fringe parts of other major urban areas were included in the tabulations by urban size groups in the same manner, as those of census metropolitan areas.

Table 3 presents the rural and urban population classified by province or territory for 1956. The rural population is further classified by farm and non-farm residence and the urban population by size of locality.

3.—Rural Population classified by Farm and Non-farm, and Urban Population classified by Size Group, by Province, Census 1956

Province or Territory	Rural			Urban Size Groups				
	Farm ¹	Non-farm	Total	1,000 to 9,999	10,000 to 29,999	30,000 to 99,999	100,000 or Over	Total
Newfoundland.....	10,138	219,684	229,822	84,036	23,225	77,991	—	185,252
Prince Edward Island.....	43,112	25,703	68,815	13,763	16,707	—	—	30,470
Nova Scotia.....	95,381	200,242	295,623	103,996	22,551	—	272,547	399,094
New Brunswick.....	125,011	175,315	300,326	87,957	30,300	136,033	—	254,290
Quebec.....	740,387	647,153	1,387,540	649,356	288,039	293,556	2,009,887	3,240,838
Ontario.....	632,153	669,861	1,302,014	605,924	403,281	801,247	2,292,467	4,102,919
Manitoba.....	202,163	137,294	339,457	55,907	45,555	—	409,121	510,583
Saskatchewan.....	360,651	198,011	558,662	98,272	61,118	162,613	—	322,003
Alberta.....	327,201	160,091	487,292	121,745	62,626	—	451,453	635,824
British Columbia.....	95,338	276,659	371,997	168,575	67,428	—	790,464	1,026,467
Yukon Territory.....	40	9,580	9,620	2,570	—	—	—	2,570
Northwest Territories.....	12	14,756	14,768	4,545	—	—	—	4,545
Canada.....	2,631,587	2,734,349	5,365,936	1,996,646	1,020,830	1,471,440	6,225,939	10,714,855

¹ Excludes 115,168 persons living on farms in localities classed as urban.

Populations of Counties and Census Divisions.—Population totals for counties and census divisions for the census years 1951 and 1956 are presented in Table 4. Corresponding information for the census years 1901-41 is given in the 1952-53 Year Book at pp. 137-141. The 1956 populations of the subdivisions of the counties and census divisions may be found in Bulletins Nos. 1-1 to 1-5 of the 1956 Census of Canada (Catalogue Nos. 92-501 to 92-505), and further details for the earlier census years in *Ninth Census of Canada, 1951, Vol. I.*

4.—Populations of the Provinces and Territories, by Counties or Census Divisions, Census Years 1951 and 1956

Province and Division or County	1951	1956	Province and County	1951	1956
	No.	No.		No.	No.
Canada	14,009,429	16,080,791	Quebec—continued		
Newfoundland	361,416	415,074	Brome.....	13,393	13,790
Division No. 1.....	149,543	171,213	Chambly.....	77,931	111,979
Division No. 2.....	22,366	23,980	Champlain.....	85,745	102,674
Division No. 3.....	20,434	21,675	Charlevoix.....	28,259	30,263
Division No. 4.....	15,982	19,631	Charlevoix East.....	14,611	15,706
Division No. 5.....	28,089	35,215	Charlevoix West.....	13,748	14,557
Division No. 6.....	27,968	33,738	Châteauguay.....	17,857	22,588
Division No. 7.....	35,294	38,209	Chicoutimi.....	115,904	137,999
Division No. 8.....	36,799	40,629	Compton.....	23,856	25,057
Division No. 9.....	17,051	19,970	Deux Montagnes.....	21,048	26,595
Division No. 10.....	7,890	10,814	Dorchester.....	33,313	34,692
Prince Edward Island	98,429	99,285	Drummond.....	53,426	55,565
Kings.....	17,943	17,853	Frontenac.....	30,733	31,433
Prince.....	37,735	38,007	Gaspe.....	62,530	71,896
Queens.....	42,751	43,425	Gaspe East.....	37,442	41,519
Nova Scotia	642,584	694,717	Gaspe West.....	16,089	19,021
Annapolis.....	21,747	21,682	Magdalen Islands.....	9,999	11,556
Antigonish.....	11,971	13,076	Hochelaga (included in		
Cape Breton.....	120,306	125,478	Montreal Island)		
Colchester.....	31,536	34,640	Hull.....	92,582	109,833
Cumberland.....	39,655	39,598	Gatineau.....	56,264	40,754
Digby.....	19,989	19,869	Hull.....	67,318	69,079
Guysborough.....	14,245	13,802	Huntingdon.....	13,457	14,278
Halifax.....	162,217	197,943	Iberville.....	13,507	15,724
Kings.....	23,357	24,889	Jacques Cartier (included in		
Inverness.....	18,390	18,235	Montreal Island)		
Lunenburg.....	33,183	37,816	Joliette.....	37,251	40,706
Pictou.....	33,256	34,207	Kamouraska.....	26,672	27,817
Queens.....	44,002	44,566	Labelle.....	27,197	28,492
Richmond.....	12,544	12,774	Lac St. Jean.....	82,006	96,673
Shelburne.....	10,783	10,961	Lac St. Jean East.....	31,128	38,273
Victoria.....	14,392	14,604	Lac St. Jean West.....	50,378	58,400
Yarmouth.....	8,217	8,185	Laprairie.....	18,639	24,620
New Brunswick	513,697	554,616	L'Assomption.....	23,205	28,642
Albert.....	9,910	10,943	Laval (included in Ile Jésus)		
Carleton.....	22,269	23,073	Lévis.....	43,625	46,839
Charlotte.....	25,135	24,497	L'Islet.....	22,996	24,047
Gloucester.....	57,489	64,119	Lotbinière.....	27,985	30,116
Kent.....	26,767	27,492	Maskinongé.....	19,478	20,870
Kings.....	22,467	24,267	Matane.....	64,182	71,042
Madawaska.....	34,329	36,988	Matane.....	30,243	34,957
Northumberland.....	42,994	47,223	Matapédia.....	33,939	36,085
Queens.....	13,206	12,838	Mégantic.....	45,325	53,028
Restigouche.....	36,212	39,720	Missisquoi.....	24,689	26,773
St. John.....	74,497	81,392	Montcalm.....	17,520	18,670
Sunbury.....	9,322	10,547	Montmagny.....	24,729	25,969
Victoria.....	18,541	19,020	Montmorency.....	21,389	24,598
Westmorland.....	80,012	85,414	Montmorency No. 1.....	17,040	19,863
York.....	42,546	47,083	Montmorency No. 2.....	4,349	4,735
Quebec	4,055,681	4,628,378	Montreal and Ile Jésus.....	1,358,075	1,577,063
Abitibi.....	86,356	99,578	Ile Jésus.....	37,843	39,410
Argenteuil.....	25,872	28,474	Montreal Island.....	1,320,232	1,507,653
Arthabaska.....	36,957	41,422	Napierville.....	9,203	10,140
Bagot.....	19,224	20,213	Nicolet.....	30,335	31,248
Beauce.....	54,973	59,967	Papineau.....	29,381	30,175
Beauharnois.....	38,748	42,691	Pontiac.....	20,696	20,995
Bellechasse.....	25,117	26,203	Portneuf.....	43,453	46,098
Berthier.....	24,717	26,359	Quebec.....	252,890	288,754
Bonaventure.....	41,121	43,240	Richelieu.....	30,801	36,086
			Richmond.....	34,102	38,641
			Rimouski.....	53,220	61,357
			Rouville.....	19,506	22,083
			Saguenay ²	42,664	57,364
			Shefford.....	43,722	48,665
			Sherbrooke.....	62,166	70,568
			Soulanges.....	9,233	9,736
			Stanstead.....	34,642	35,319
			St. Hyacinthe.....	38,101	40,302
			St. Jean.....	28,702	34,054
			St. Maurice.....	98,855	102,050

¹ Includes districts of Abitibi and Mistassini.² Includes New Quebec district.

4.—Populations of the Provinces and Territories, by Counties or Census Divisions, Census Years 1951 and 1956—concluded

Province and County or Division	1951	1956	Province or Territory and Division	1951	1956
	No.	No.		No.	No.
Quebec—concluded			Manitoba—concluded		
Témiscamingue.....	55,102	57,661	Division No. 4.....	15,036	14,630
Témiscouata.....	65,550	68,362	Division No. 5.....	52,453	60,568
Rivière du Loup.....	37,375	39,461	Division No. 6.....	330,130	368,724
Témiscouata.....	28,175	28,901	Division No. 7.....	40,791	45,923
Terrebonne.....	67,437	81,329	Division No. 8.....	19,565	22,171
Vaudreuil.....	17,378	22,625	Division No. 9.....	58,875	72,639
Verchères.....	17,729	20,908	Division No. 10.....	19,311	18,928
Wolfe.....	18,153	18,774	Division No. 11.....	25,101	24,567
Yamaska.....	16,071	16,616	Division No. 12.....	23,357	23,666
			Division No. 13.....	24,537	24,188
Ontario.....	4,597,542	5,404,933	Division No. 14.....	23,499	22,581
Algoma.....	64,496	82,059	Division No. 15.....	12,492	12,365
Brant.....	72,857	77,992	Division No. 16.....	45,692	52,564
Bruce.....	41,311	42,070			
Carleton.....	242,247	252,630	Saskatchewan.....	831,728	880,665
Cochrane.....	38,850	38,768	Division No. 1.....	35,481	36,948
Dufferin.....	14,566	15,569	Division No. 2.....	34,714	33,929
Dundas.....	15,818	16,978	Division No. 3.....	29,477	29,686
Durham.....	30,115	35,827	Division No. 4.....	16,691	17,386
Elgin.....	55,518	59,114	Division No. 5.....	48,877	47,000
Essex.....	217,150	246,901	Division No. 6.....	113,614	132,849
Frontenac.....	66,099	76,534	Division No. 7.....	50,421	58,448
Glengarry.....	17,702	18,693	Division No. 8.....	35,211	39,643
Grenville.....	17,045	20,563	Division No. 9.....	54,939	52,931
Grey.....	58,960	60,971	Division No. 10.....	37,633	35,903
Haldimand.....	24,138	26,067	Division No. 11.....	84,365	102,715
Haliburton.....	7,670	8,012	Division No. 12.....	27,896	28,484
Halton.....	44,003	68,297	Division No. 13.....	30,721	32,972
Hastings.....	74,298	83,745	Division No. 14.....	61,615	54,971
Huron.....	49,280	51,728	Division No. 15.....	81,160	82,502
Kenora.....	39,212	47,156	Division No. 16.....	45,211	45,339
Kent.....	79,128	85,362	Division No. 17.....	29,048	29,049
Lambton.....	74,960	89,939	Division No. 18.....	14,654	19,910
Lanark.....	35,601	38,025			
Leeds.....	38,831	43,077	Alberta.....	939,501	1,123,116
Lennox and Addington.....	19,544	21,611	Division No. 1.....	28,317	34,496
Lincoln.....	89,366	111,740	Division No. 2.....	67,694	74,991
Manitoulin.....	11,214	11,060	Division No. 3.....	27,667	30,426
Middlesex.....	162,139	190,897	Division No. 4.....	13,182	14,294
Muskoka.....	24,713	25,134	Division No. 5.....	39,055	38,120
Nipissing.....	50,517	60,452	Division No. 6.....	177,441	237,886
Norfolk.....	42,708	46,122	Division No. 7.....	40,217	40,214
Northumberland.....	33,482	38,018	Division No. 8.....	57,513	64,168
Ontario.....	87,088	108,440	Division No. 9.....	19,496	17,239
Oxford.....	58,818	65,228	Division No. 10.....	70,677	71,500
Parry Sound.....	27,371	28,095	Division No. 11.....	235,475	323,539
Peel.....	55,673	83,108	Division No. 12.....	39,886	44,947
Perth.....	52,584	55,057	Division No. 13.....	46,638	45,033
Peterborough.....	60,789	67,981	Division No. 14.....	14,443	15,846
Prescott.....	25,576	26,291	Division No. 15.....	61,800	70,417
Prince Edward.....	18,559	21,145			
Rainy River.....	22,132	25,483	British Columbia.....	1,165,210	1,398,464
Renfrew.....	66,717	78,245	Division No. 1.....	27,628	30,584
Russell.....	17,666	18,994	Division No. 2.....	60,060	65,615
Simcoe.....	106,482	127,016	Division No. 3.....	77,686	84,871
Stormont.....	48,458	56,452	Division No. 4.....	649,238	787,921
Sudbury.....	109,590	141,975	Division No. 5.....	215,003	256,355
Thunder Bay.....	105,367	122,890	Division No. 6.....	41,823	54,304
Timiskaming.....	50,016	50,264	Division No. 7.....	18,247	21,022
Victoria.....	27,127	28,248	Division No. 8.....	40,276	60,067
Waterloo.....	126,123	148,774	Division No. 9.....	20,854	37,211
Welland.....	123,233	149,606	Division No. 10.....	14,395	20,514
Wellington.....	66,930	75,691			
Wentworth.....	266,083	316,238	Yukon Territory.....	9,096	12,190
York.....	1,176,622	1,440,601	Northwest Territories.....	16,004	19,313
Manitoba.....	776,541	850,040			
Division No. 1.....	23,861	24,888			
Division No. 2.....	38,971	39,118			
Division No. 3.....	22,870	22,520			

¹ Includes district of Patricia.

Populations of Incorporated Urban Centres.—The growth of Canadian cities with populations of over 30,000 from 1951 to 1956, together with the years of their incorporation as cities, is shown in Table 5. All incorporated cities, towns and villages having populations of 1,000 or over in 1956 are listed in Table 8.

5.—Incorporated Cities with Populations of Over 30,000 at the 1956 Census, with Comparable Data for 1951

City and Province	Year of Incorporation as City	Population		City and Province	Year of Incorporation as City	Population	
		1951	1956			1951	1956
		No.	No.			No.	No.
Brantford, Ont.....	1877	36,727	51,869	Quebec, Que.....	1832	164,016	170,703
Calgary, Alta.....	1893	129,060	181,780	Regina, Sask.....	1903	71,319	89,755
Edmonton, Alta.....	1904	159,631	226,002	St. Catharines, Ont.....	1876	37,984	39,708
Fort William, Ont.....	1907	34,947	39,464	Saint John, N.B.....	1785	50,779	52,491
Guelph, Ont.....	1879	27,386	33,860	St. John's, Nfld.....	1888	52,873	57,078
Halifax, N.S.....	1841	65,589	93,301	St. Laurent, Que.....	1955	20,426	38,291
Hamilton, Ont.....	1846	208,321	239,625	Sarnia, Ont.....	1914	34,697	43,447
Hull, Que.....	1875	43,483	49,243	Saskatoon, Sask.....	1906	53,268	72,858
Jacques Cartier, Que.....	1951	22,450	33,132	Sault Ste. Marie, Ont.....	1912	32,452	37,329
Kingston, Ont.....	1846	33,459	48,618	Sherbrooke, Que.....	1875	50,543	58,668
Kitchener, Ont.....	1912	41,867	59,562	Sudbury, Ont.....	1930	42,410	46,482
Lachine, Que.....	1909	27,773	34,494	Sydney, N.S.....	1904	31,317	32,162
London, Ont.....	1855	95,343	101,693	Toronto, Ont.....	1834	675,754	667,706
Moncton, N.B.....	1890	27,334	36,003	Trois Rivières, Que.....	1857	46,074	50,483
Montreal, Que.....	1832	1,021,520	1,109,439	Vancouver, B.C.....	1886	344,833	365,844
New Westminster, B.C.....	1860	28,639	31,665	Verdun, Que.....	1912	77,391	78,262
Oshawa, Ont.....	1924	41,545	50,412	Victoria, B.C.....	1862	51,331	54,584
Ottawa, Ont.....	1854	202,045	222,129	Windsor, Ont.....	1892	120,049	121,980
Peterborough, Ont.....	1905	38,272	42,698	Winnipeg, Man.....	1873	235,710	255,093
Port Arthur, Ont.....	1907	31,161	38,136				

For census purposes, metropolitan areas have been established for groups of urban communities that are in close economic, geographic and social relationship. The total population of each of the census metropolitan areas in 1956, with the comparable figure from the 1951 Census covering the same area as in 1956, is shown in Table 6. In this table the metropolitan area has been named after the largest city of the urban group.

6.—Populations of Census Metropolitan Areas at the 1956 Census, with Populations of Same Areas in 1951

Metropolitan Area	Population		Metropolitan Area	Population	
	1951	1956		1951	1956
	No.	No.		No.	No.
Calgary, Alta.....	140,645	200,449	Saint John, N.B.....	78,337	86,015
Edmonton, Alta.....	173,748	251,004	St. John's, Nfld.....	67,313	77,991
Halifax, N.S.....	133,931	164,200	Toronto, Ont.....	1,117,470	1,358,028
Hamilton, Ont.....	272,327	327,831	Vancouver, B.C.....	561,960	665,017
London, Ont.....	128,977	154,453	Victoria, B.C.....	108,235	125,447
Montreal, Que.....	1,395,400	1,620,758	Windsor, Ont.....	163,618	185,865
Ottawa, Ont.....	292,476	345,460	Winnipeg, Man.....	354,069	409,121
Quebec, Que.....	274,827	309,959			

The distribution of the population of incorporated cities, towns and villages in Canada by size group is given in Table 7 for the census years 1941, 1951 and 1956.

7.—Populations of Incorporated Cities, Towns and Villages, by Size Group, Census Years 1941, 1951 and 1956

Size Group	1941 ¹			1951			1956		
	Number	Population	P.C. of Total Pop.	Number	Population	P.C. of Total Pop.	Number	Population	P.C. of Total Pop.
Over 500,000.....	2	1,570,464	13.65	2	1,697,274	12.11	2	1,777,145	11.05
Between—									
400,000 and 500,000.....	—	—	—	—	—	—	—	—	—
300,000 and 400,000.....	—	—	—	—	—	—	—	—	—
200,000 and 300,000.....	2	497,313	4.32	3	646,076	4.61	4	942,849	5.86
100,000 and 200,000.....	4	577,356	5.02	4	572,756	4.09	4	576,156	3.58
50,000 and 100,000.....	7	508,808	4.42	9	588,436	4.20	12	769,323	4.78
25,000 and 50,000.....	19	605,805	5.26	24	802,380	5.73	27	929,624	5.78
15,000 and 25,000.....	20	377,505	3.28	34	636,713	4.54	43	853,341	5.31
10,000 and 15,000.....	24	296,195	2.57	29	347,410	2.48	44	527,802	3.28
5,000 and 10,000.....	74	510,429	4.44	100	720,077	5.14	117	830,289	5.16
3,000 and 5,000.....	91	348,709	3.03	119	457,492	3.27	130	497,818	3.10
1,000 and 3,000.....	337	561,019	4.88	409	698,092	4.98	450	772,013	4.80
Under 1,000.....	1,060	398,813	3.47	1,049	429,683	3.07	1,039	443,922	2.76
Totals.....	1,640	6,252,416	54.34	1,783	7,941,222	56.68	1,873	9,286,126	57.75

¹ Newfoundland not included.

Of the 1,873 incorporated urban centres in Canada at the date of the latest census, (June 1, 1956) 834 had a population of 1,000 or over. These are listed alphabetically by province in Table 8 with their 1956 populations and comparative figures for 1951.

8.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over in 1956, by Province, with Comparable Data for 1951

NOTE.—Provincial capital cities are marked by asterisk (*).

Province and Incorporated Centre	1951	1956	Province and Incorporated Centre	1951	1956
No.	No.	No.	No.	No.	No.
Newfoundland—			Prince Edward Island—		
Bay Roberts.....	1,222	1,306	*Charlottetown.....	15,887	16,707
Burgeo.....	891	1,138	Montague.....	1,068	1,152
Burin.....	796	1,116	Parkdale.....	¹	1,422
Carbonear.....	3,351	3,955	Souris.....	1,183	1,449
Chapel-Port aux Basques.....	2,634	3,320	Spring Park.....	¹	1,370
Clarenville.....	¹	1,195	Summerside.....	6,547	7,242
Corner Brook.....	²	23,225			
Deer Lake.....	2,655	3,481	Nova Scotia—		
Fogo.....	1,078	1,184	Amherst.....	9,870	10,301
Fortune.....	867	1,194	Antigonish.....	3,196	3,592
Freshwater.....	810	1,048	Berwick.....	1,045	1,134
Grand Bank.....	2,148	2,430	Bridgetown.....	1,038	1,041
Harbour Grace.....	2,331	2,545	Bridgewater.....	4,010	4,445
Lewisporte.....	1,218	2,076	Canso.....	1,313	1,261
Marystown.....	¹	1,460	Dartmouth.....	15,037	21,093
Mount Pearl Park-Glendale.....	¹	1,979	Digby.....	2,047	2,145
Placentia.....	614 ³	1,233	Dominion.....	3,143	2,964
St. Anthony.....	1,380	1,761	Glace Bay.....	25,586	24,416
*St. John's.....	52,873	57,078	*Halifax.....	85,589	93,301
St. Lawrence.....	1,451	1,837	Hantsport.....	1,131	1,298
Stephenville.....	¹	3,762	Inverness.....	2,360	2,026
Wabana.....	6,460	7,873	Kentville.....	4,240	4,937
Wesleyville.....	1,304	1,313	Liverpool.....	3,535	3,500
Windsor.....	3,674	4,520	Lockeport.....	1,225	1,207

For footnotes, see end of table, p. 186.

8.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over in 1956, by Province, with Comparable Data for 1951—continued

Province and Incorporated Centre	1951	1956	Province and Incorporated Centre	1951	1956
No.	No.	No.	No.	No.	No.
Nova Scotia—concluded			Quebec—continued		
Louisburg.....	1,120	1,314	Beauport.....	2,015 ⁵	2,381
Lunenburg.....	2,816	2,859	Bedford.....	2,073	2,272
Mahone Bay.....	1,019	1,109	Beebe Plain.....	1,352	1,363
Middleton.....	1,506	1,769	Belœil.....	2,992	3,966
Mulgrave.....	1,212	1,227	Bernierville.....	1,959	2,431
New Glasgow.....	9,933	9,998	Berthierville.....	3,325	3,504
New Waterford.....	10,423	10,381	Bic.....	1,086	1,142
North Sydney.....	7,354	8,125	Black Lake.....	2,800	3,685
Oxford.....	1,466	1,545	Bois des Filions.....	787	1,648
Parssboro.....	1,906	1,849	Boucherville.....	1,583	3,911
Pictou.....	4,259	4,564	Bourlamaque.....	2,460	3,018
Port Hawkesbury.....	1,034	1,078	Bromptonville.....	2,025	2,316
Shelburne.....	2,040	2,337	Brownsburg.....	3,238	3,412
Springhill.....	7,138	7,348	Buckingham.....	6,129	6,781
Stellarton.....	5,575	5,445	Cabano.....	2,594	2,350
Stewiacke.....	1,018	1,024	Cadillac.....	1,514	1,281
Sydney.....	31,317	32,162	Campbell's Bay.....	975	1,029
Sydney Mines.....	8,410	8,731	Cap Chat.....	1,642	1,954
Trenton.....	3,089	3,240	Cap de la Madeleine.....	18,667	22,943
Truro.....	10,756	12,250	Causapsal.....	2,609	2,957
Westville.....	4,301	4,247	Chambly.....	2,160	2,817
Windsor.....	3,439	3,651	Chambord.....	1,070	1,091
Wolfville.....	2,313	2,497	Chandler.....	2,326	3,338
Yarmouth.....	8,106	8,095	Charlemagne.....	1,856	2,428
			Charlesbourg.....	5,734	8,202
New Brunswick—			Charny.....	3,300	3,639
Bathurst.....	4,453	5,267	Châteauguay.....	2,240	3,265
Campbellton.....	7,754	8,389	Châteauguay Heights.....	627	1,146
Chatham.....	5,223	6,332	Chibougamau.....	1	1,262
Dalhousie.....	4,939	5,468	Chicoutimi.....	23,111	24,878
Dieppe.....	3,402	3,876	Chicoutimi N.....	3,966	6,446
Edmundston.....	10,753	11,997	Clermont.....	2,027	2,628
*Fredericton.....	16,018	18,303	Coaticook.....	6,341	6,492
Grand Falls.....	2,365	3,672	Contrecoeur.....	1,435	1,662
Hartland.....	1,000	1,022	Cookshire.....	1,209	1,315
Lancaster.....	1	12,371	Côte St. Luc.....	1,083	5,914
Marysville.....	2,152	2,538	Courville.....	3,138	3,772
Milltown.....	2,267	1,975	Cowansville.....	4,431	5,242
Moncton.....	27,334	36,003	Crabtree.....	983	1,103
Newcastle.....	4,248	4,670	Danville.....	2,092	2,296
St. Andrews.....	1,458	1,534	Deschailons sur St. Laurent.....	1,185	1,266
St. George.....	1,263	1,322	Deschambault.....	954	1,002
St. Leonard.....	1,419	1,593	Deschênes.....	1,169	1,680
St. Stephen.....	3,769	3,491	Disraeli.....	2,145	2,473
Sackville.....	2,873	2,849	Dolbeau.....	4,307	5,079
Saint John.....	50,779	52,491	Donnacona.....	3,663	4,147
Shediac.....	2,010	2,173	Dorion.....	2,413	3,089
Shippegan.....	1,181	1,362	Dorval.....	5,293	14,055
Sussex.....	3,224	3,403	Drummondville.....	14,341	26,284
Woodstock.....	3,996	4,308	Drummondville W.....	1,275	1,606
			Duparquet.....	1,485	1,144
Quebec—			East Angus.....	3,714	4,239
Acton Vale.....	3,367	3,547	East Broughton Station.....	1	1,060
Alma.....	7,975	10,822	Farnham.....	4,926	5,843
Amos.....	4,265	5,145	Ferme Neuve.....	1,660	1,891
Amqui.....	2,599	3,247	Forestville.....	709	1,117
Anjou.....	1,501 ⁴	2,140	Fort Chambly.....	1,636	1,885
Arthabaska.....	2,321	2,399	Fort Coulonge.....	1,431	1,633
Arvida.....	11,078	12,919	Gaspé.....	1,692	2,194
Asbestos.....	8,190	8,969	Gatineau.....	5,771	8,423
Ayersville.....		2,348	Giffard.....	8,097	9,964
Aylmer.....	4,375	5,294	Granby.....	21,989	27,095
Bagotville.....	4,136	4,822	Grande Rivière.....	932	1,024
Baie Comeau.....	3,972	4,332	Grand Mère.....	11,089	14,023
Baie de Shawinigan.....	1,223	1,137	Greenfield Park.....	3,379	4,417
Baie d'Urée.....	719	1,838	Grenville.....	1,069	1,277
Baie St. Paul.....	3,716	4,052	Hampstead.....	3,260	4,355
Barraute.....	500	1,081	Hauterive.....	283	1,762
Beaconsfield.....	1,888	5,496	Hébertville Station.....	1,038	1,214
Beauceville.....	1,149	1,459	Hudson.....	1,283	1,549
Beauceville E.....	1,573	1,740	Hudson Heights.....	925	1,289
Beauharnois.....	5,694	6,774	Hull.....	43,483	49,243
Beaufort.....	5,390	6,735	Huntingdon.....	2,806	2,995

8.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over in 1956, by Province, with Comparable Data for 1951—continued

Province and Incorporated Centre	1951	1956	Province and Incorporated Centre	1951	1956
	No.	No.		No.	No.
Quebec—continued			Quebec—continued		
Iberville.....	5,185	6,270	Notre Dame de Portneuf.....	1,144	1,251
Île Perrot.....	2,008 ^a	2,800	Notre Dame du Lac.....	1,364	1,512
Isle Malgine.....	482	1,761	Ormstown.....	1,233	1,347
Jacques Cartier.....	22,450	33,132	Outremont.....	30,057	29,990
Joliette.....	16,064	16,940	Papineauville.....	1,024	1,141
Jonquière.....	21,618	25,550	Parent.....	1,255	1,443
Kénogami.....	9,895	11,309	Pierreville.....	1,448	1,589
Knowlton.....	1,094	1,328	Pincourt.....	521	1,437
Labelle.....	1,003	1,150	Plessisville.....	5,084	5,829
L'Abord à Plouffe.....	4,604	8,099	Pointe à Gatineau.....	3,874	6,175
Lac au Saumon.....	1,622	1,681	Pointe au Pic.....	1,105	1,220
Lachine.....	27,773	34,494	Pointe aux Trembles.....	8,241	11,981
Lachute.....	6,179	6,911	Pointe Claire.....	8,753	15,208
Lacolle.....	1,055	1,141	Pont Rouge.....	2,413	2,631
La Guadeloupe.....	1,321	1,487	Pont Viau.....	5,129	8,218
La Malbaie.....	2,466	2,817	Port Alfred.....	3,937	7,968
La Pérade.....	1,111	1,282	Price.....	2,810	3,140
La Petite Rivière.....	740 ^a	1,353	Princeville.....	1,967	2,841
La Prairie.....	4,058	5,372	*Quebec.....	164,016	170,703
La Providence.....	2,693	3,826	Quebec W.....	7,295	7,945
LaSalle.....	11,633	18,973	Rawdon.....	1,912	2,049
La Sarre.....	2,744	3,155	Richelieu.....	1,129	1,398
L'Assomption.....	2,688	3,683	Richmond.....	3,471	3,849
La Tuque.....	9,538	11,096	Rigaud.....	1,579	1,784
Laurentides.....	1,465	1,513	Rimouski.....	11,565	14,630
Lauson.....	9,643	10,255	Rimouski E.....	889	1,209
Laval des Rapides.....	4,998	11,248	Rivière des Prairies.....	4,072 ^a	6,806
Laval W.....	1,935	3,818	Rivière du Loup.....	9,425	9,964
LeMoine.....	4,078	5,662	Rivière du Moulin.....	2,685	4,138
Legnoyville.....	2,895	3,149	Robertsonville.....	665	1,030
L'Epiphanie.....	2,462	2,671	Roberval.....	4,897	6,648
Léry.....	1,194	1,573	Rock Island.....	1,646	1,608
Lévis.....	13,162	13,644	Rouyn.....	14,633	17,076
Linéire.....	949	1,149	Roxboro.....	459	1,910
L'Isletville.....	830	1,051	Roxton Falls.....	945	1,023
L'Isle Verte.....	1	1,456	Ste. Adèle.....	961	1,309
Longueuil.....	11,103	14,332	St. Agapitville.....	922	1,079
Loretteville.....	4,382	4,957	St. Agathe des Monts.....	5,169	5,173
Louiseville.....	4,088	4,392	St. Ambroise.....	1,032	1,305
Luzeville.....	1,059	1,265	St. Anne de Beaupré.....	1,827	1,865
Lyster.....	961	1,010	St. Anne de Bellevue.....	3,342	3,647
Macamic.....	1,123	1,388	St. Anselme.....	991	1,086
MacKayville.....	6,494	9,958	St. Antoine des Laurentides.....	1	2,092
Magog.....	12,423	12,720	St. Basile S.....	1,347	1,635
Malartic.....	5,983	6,818	St. Casimir.....	1,334	1,447
Maniwaki.....	3,835	5,399	St. Césaire.....	1,658	1,739
Maple Grove.....	847	1,115	St. Coeur de Marie.....	1,061	1,282
Mariéville.....	3,117	3,478	St. Croix.....	1,080	1,241
Masson.....	1,475	1,656	St. Cyrille.....	1,189	1,198
Matane.....	6,345	8,069	St. Dorothée.....	726	1,158
McMasterville.....	1,509	1,738	St. Elzéar.....	1,596 ^a	2,589
Mégantic.....	6,164	6,864	St. Émile.....	1,415 ^a	1,645
Melocheville ^a	1,300	1,422	St. Émilien.....	1,651	2,014
Mistassini.....	2,298	2,912	St. Eustache.....	2,615	3,740
Montbello.....	1,397	1,287	St. Eustache sur le Lac.....	3,211	5,830
Mont Joli.....	4,938	6,179	St. Félicien.....	2,656	4,152
Mont Laurier.....	4,701	5,486	St. Félix de Valois.....	1,201	1,323
Montmagny.....	5,844	6,405	Ste. Foy.....	5,236	14,615
Montmorency.....	5,817	6,077	St. Fulgence.....	902	1,054
Montreal.....	1,021,520	1,109,439	St. Gabriel de Brandon.....	2,661	3,265
Montreal E.....	4,513	4,607	St. Geneviève de Pierrefonds.....	1,322	2,041
Montreal N.....	14,081	25,407	St. Georges (Beauce Co.).....	2,657	3,197
Montreal S.....	4,214	5,319	St. Georges (Champlain Co.).....	1,143	1,454
Montreal W.....	3,721	4,370	St. Georges W. (Beauce Co.).....	2,691	3,643
Mount Royal.....	11,352	16,990	St. Hilaire.....	1,436	2,000
Murdochville.....	1	1,694	St. Hyacinthe.....	20,236	20,439
Napierville.....	1,356	1,510	St. Jacques.....	1,729	1,979
Naudville.....	1,430	2,894	St. Jean.....	19,305	24,367
Nicolet.....	4,084	3,771	St. Jean de Boischatel.....	1,297	1,461
Noranda.....	9,672	10,323	St. Jean Eudes.....	1	2,580
Normandin.....	1,678	1,918	St. Jérôme (Lac St. Jean Co.).....	1,480	1,505
Notre Dame d'Hébertville.....	1,285	1,542	St. Jérôme (Terrebonne Co.).....	17,685	20,645
Notre Dame de Lorette.....	2,516	3,464	St. Joseph (Beauce Co.).....	2,417	2,484

For footnotes, see end of table, p. 186.

8.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over in 1956, by Province, with Comparable Data for 1951—continued

Province and Incorporated Centre	1951	1956	Province and Incorporated Centre	1951	1956
No.	No.	No.	No.	No.	No.
Quebec—concluded			Ontario—continued		
St. Joseph (St. Hyacinthe Co.)...	2,122	2,708	Alliston.....	1,987	2,426
St. Joseph de la Rivière Bleue...	1,334	1,481	Almonte.....	2,672	2,960
St. Joseph de Sorel.....	3,349	3,571	Amherstburg.....	3,638	4,099
St. Jovite.....	1,453	1,613	Arnprior.....	4,381	5,137
St. Lambert.....	8,615	12,224	Arthur.....	1,088	1,124
St. Laurent.....	20,426	38,291	Aurora.....	3,358	3,957
St. Marc des Carrières.....	2,351	2,457	Aylmer.....	3,483	4,201
Ste. Marie.....	2,431	3,094	Bancroft.....	1,834	1,669
St. Martin.....	1	6,440	Barrie.....	12,514	16,851
St. Michel (Montreal Island)...	10,539	24,706	Barry's Bay.....	1,218	1,366
St. Noël.....	830	1,027	Beamsville.....	1,712	2,198
St. Pacôme.....	1,197	1,283	Beaverton.....	1,048	1,099
St. Pascal.....	1,736	1,962	Belle River.....	1,431	1,814
St. Pie.....	1,182	1,228	Belleville.....	19,519	20,605
St. Pierre (Montreal Island)...	4,976	5,276	Blenheim.....	2,459	2,844
St. Raphaël.....	955	1,059	Blind River.....	2,512	3,633
St. Raymond.....	3,139	3,502	Bobcaygeon.....	1,207	1,242
St. Rémi.....	1,845	2,303	Bolton.....	820	1,093
Ste. Rosalie.....	1,038	1,142	Bowmanville.....	5,430	6,544
Ste. Rose.....	3,660	5,373	Bracebridge.....	2,684	2,849
St. Sauveur des Monts.....	1,066	1,316	Bradford.....	1,483	2,010
St. Siméon.....	1,103	1,114	Brampton.....	8,389	12,587
Ste. Thècle.....	1,468	1,499	Brantford.....	36,727	51,869
Ste. Thérèse.....	7,038	8,266	Bridgeport.....	1,137	1,402
St. Tite.....	2,856	3,183	Brighton.....	1,967	2,182
St. Vincent de Paul.....	1	6,784	Brockville.....	12,301	13,885
Sayabec.....	2,220	2,281	Bronte.....	1	2,024
Schefferville.....	1	1,632	Burlington.....	6,017	9,127
Scotstown.....	1,350	1,347	Burlington Beach.....	2,827	3,314
Senneterre.....	1,686	2,197	Caledonia.....	1,681	2,078
Sept Îles.....	1,866	5,592	Campbellford.....	3,235	3,425
Shawinigan East.....	1	2,451	Capreol.....	2,002	2,394
Shawinigan Falls.....	26,903	28,597	Cardinal.....	1,782	1,994
Shawinigan South.....	6,637	10,947	Carleton Place.....	4,725	4,790
Shawville.....	1,159	1,281	Casselman.....	1,158	1,241
Sherbrooke.....	50,543	58,668	Chatham.....	21,218	22,262
Sillery.....	10,376	13,154	Chelmsford.....	1,210	2,142
Sorel.....	14,961	16,476	Chesley.....	1,672	1,629
Stanstead Plain.....	995	1,134	Chesterville.....	1,094	1,169
Sutton.....	1,389	1,407	Chippawa.....	1,762	2,039
Tadoussac.....	1,064	1,066	Clinton.....	2,547	2,896
Temiscaming.....	2,787	2,694	Cobalt.....	2,230	2,367
Templeton.....	1,717	2,475	Cobourg.....	7,470	9,399
Terrebonne.....	3,200	4,097	Cochrane.....	3,401	3,695
Thetford Mines.....	15,095	19,511	Colborne.....	1,108	1,240
Thurso.....	1,973	2,324	Collingwood.....	7,412	7,978
Tracy.....	3,847 ^a	6,842	Coniston.....	2,292	2,478
Tring Junction.....	751	1,083	Copper Cliff.....	3,974	3,801
Trois Pistoles.....	3,537	4,039	Cornwall.....	16,899	18,158
Trois Rivières.....	46,074	50,483	Crystal Beach.....	1,204	1,850
Val David.....	940	1,016	Delhi.....	2,517	3,002
Val d'Or.....	8,685	9,876	Deseronto.....	1,522	1,729
Vallée Junction.....	1,279	1,340	Dresden.....	2,052	2,260
Valleyfield (Salaberry de).....	22,414	23,584	Dryden.....	2,627	4,428
Val St. Michel.....	689	1,140	Dundas.....	6,846	9,507
Varennes.....	1,104	2,047	Dunnville.....	4,478	4,776
Verchères.....	1,201	1,412	Durham.....	1,839	2,067
Verdun.....	77,391	78,262	Eastview.....	13,799	19,283
Victoriaville.....	13,124	16,031	Eganville.....	1,326	1,598
Ville Marie.....	1,316	1,409	Elmira.....	2,589	2,916
Villeneuve ^a	1,096	1,417	Elora.....	1,348	1,457
Warwick.....	2,094	2,248	Englehart.....	1,585	1,705
Waterloo.....	4,054	4,266	Essex.....	2,741	3,348
Waterville.....	1,205	1,373	Exeter.....	2,547	2,655
Weedon Centre.....	1,066	1,287	Fenelon Falls.....	1,304	1,137
Westmount.....	25,222	24,800	Fergus.....	3,387	3,677
Windsor.....	4,714	5,886	Fonthill.....	1,412	1,872
			Forest.....	1,790	2,035
			Forest Hill.....	15,305	19,480
Ontario—			Fort Erie.....	7,572	8,632
Acton.....	2,880	3,578	Fort Frances.....	8,038	9,005
Ajax.....	4,168 ^a	5,683	Fort William.....	34,947	39,464
Alexandria.....	2,204	2,487	Frankford.....	1,393	1,491
Alfred.....	1	1,257			

For footnotes, see end of table, p. 186.

**8.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over in 1956,
by Province, with Comparable Data for 1951—continued**

Province and Incorporated Centre	1951	1956	Province and Incorporated Centre	1951	1956
No.	No.	No.	No.	No.	No.
Ontario—continued			Ontario—continued		
Galt.....	19,207	23,738	Owen Sound.....	16,423	16,976
Gananoque.....	4,572	4,981	Palmerston.....	1,573	1,550
Georgetown.....	3,452	5,942	Paris.....	5,249	5,504
Geraldton.....	3,227	3,263	Parkhill.....	991	1,043
Glencoe.....	979	1,044	Parry Sound.....	5,183	5,378
Goderich.....	4,934	5,886	Pembroke.....	12,704	15,434
Gravenhurst.....	3,005	3,014	Penetanguishene.....	4,949	5,420
Grimsbv.....	2,773	3,805	Porth.....	5,034	5,145
Guelph.....	27,386	33,860	Peterborough.....	38,272	42,698
Hagersville.....	1,746	1,964	Petrolia.....	3,105	3,426
Haileybury.....	2,346	2,654	Pickering.....	1	1,150
Hamilton.....	208,321	239,625	Picton.....	4,287	4,998
Hanover.....	3,533	3,943	Point Edward.....	1,838	2,558
Harriston.....	1,494	1,592	Port Arthur.....	31,161	38,136
Harrow.....	1,519	1,851	Port Colborne.....	8,275	14,028
Havelock.....	1,132	1,205	Port Credit.....	3,643	6,350
Hawkesbury.....	7,194	7,929	Port Dalhousie.....	2,616	3,087
Hearst.....	1,723	2,214	Port Dover.....	2,440	2,790
Hespeler.....	3,862	3,876	Port Elgin.....	1,558	1,597
Huntsville.....	3,286	3,051	Port Hope.....	6,548	7,522
Ingersoll.....	6,524	6,811	Port Perry.....	1,721	2,121
Iroquois.....	1,086	1,078	Port Stanley.....	1,491	1,480
Iroquois Falls.....	1,342	1,478	Prescott.....	3,518	4,920
Kapuskasing.....	4,687	5,463	Preston.....	7,619	9,387
Keewatin.....	1,634	1,949	Rainy River.....	1,348	1,354
Kemptville.....	1,488	1,730	Renfrew.....	7,360	8,634
Kenora.....	8,695	10,278	Richmond Hill.....	2,184	6,677
Kincardine.....	2,672	2,667	Ridgetown.....	2,365	2,483
Kingston.....	33,459	48,618	Riverside.....	9,214	13,335
Kingsville.....	2,631	2,884	Rockcliffe Park.....	1,595	2,097
Kitchener.....	44,867	59,562	Rockland.....	2,348	2,757
Lakefield.....	1,710	1,938	Rodney.....	885	1,026
La Salle.....	1,854	2,703	St. Catharines.....	37,984	39,708
Leamington.....	6,950	7,856	St. Mary's.....	3,995	4,185
Leaside.....	16,233	16,538	St. Thomas.....	18,173	19,129
Levack.....	1,833	2,929	Sarnia.....	34,697	43,447
Lindsay.....	9,603	10,110	Sault Ste. Marie.....	32,452	37,329
Listowel.....	3,469	3,644	Seaforth.....	2,118	2,128
Little Current.....	1,397	1,514	Shelburne.....	1,184	1,245
Lively.....	1	2,840	Simcoe.....	7,269	8,078
London.....	95,343	101,693	Sioux Lookout.....	2,364	2,504
Long Branch.....	8,727	10,249	Smith's Falls.....	8,441	8,967
L'Orignal.....	967	1,067	Smooth Rock Falls.....	1,102	1,104
Madoc.....	1,240	1,325	Southampton.....	1,700	1,640
Markham.....	1,606	2,873	Stayner.....	1,280	1,429
Marmora.....	1,117	1,428	Stirling.....	1,100	1,191
Massey.....	937	1,068	Stoney Creek.....	1,922	4,506
Mattawa.....	3,097	3,208	Stouffville.....	1,695	2,307
Meaford.....	3,178	3,643	Stratford.....	18,785	19,972
Merritt.....	4,714	5,404	Strathroy.....	3,708	4,240
Midland.....	7,206	8,250	Streetsville.....	1,139	2,648
Milton.....	2,451	4,294	Sturgeon Falls.....	4,962	5,874
Milverson.....	1,055	1,070	Sudbury.....	42,410	46,482
Mimico.....	11,342	13,687	Sutton.....	1,168	1,310
Mitchell.....	1,979	2,146	Swansea.....	8,072	8,595
Morrisburg.....	1,858	2,131	Tavistock.....	1,094	1,155
Mount Forest.....	2,291	2,438	Tecumseh.....	3,543	4,209
Napanee.....	3,897	4,273	Thamesville.....	968	1,074
Newcastle.....	958	1,098	Thessalon.....	1,595	1,716
New Hamburg.....	1,738	1,939	Thornbury.....	971	1,037
New Liskard.....	4,215	4,619	Thorold.....	6,397	8,053
Newmarket.....	5,356	7,368	Tilbury.....	2,682	3,138
New Toronto.....	11,194	11,560	Tillsonburg.....	5,330	6,216
Niagara.....	2,108	2,740	Timmins.....	27,743	27,551
Niagara Falls.....	22,874	23,563	*Toronto.....	675,754	667,706
North Bay.....	17,944	21,020	Trenton.....	10,085	11,492
Norwich.....	1,439	1,611	Tweed.....	1,562	1,634
Norwood.....	925	1,017	Unbridge.....	1,785	2,065
Oakville.....	6,910	9,983	Vankleek Hill.....	1,480	1,647
Orangeville.....	3,249	3,887	Victoria Harbour.....	953	1,012
Orillia.....	12,110	13,857	Walkerton.....	3,264	3,698
Oshawa.....	41,545	50,412	Wallaceburg.....	7,688	7,892
Ottawa.....	202,045	222,129	Waterdown.....	1,347	1,754

For footnotes, see end of table, p. 186.

**8.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over in 1956,
by Province, with Comparable Data for 1951—continued**

Province and Incorporated Centre	1951	1956	Province and Incorporated Centre	1951	1956
	No.	No.		No.	No.
Ontario—concluded			Saskatchewan—concluded		
Waterford.....	1,745	1,908	Melfort.....	2,919	3,322
Waterloo.....	11,991	16,373	Melville.....	4,458	4,948
Watford.....	1,201	1,217	Moose Jaw.....	24,355	29,603
Welland.....	15,382	16,405	Moosomin.....	1,235	1,390
Wellington.....	982	1,077	Nipawin.....	3,050	3,337
West Lorne.....	1,031	1,088	North Battleford.....	7,473	8,924
Weston.....	8,677	9,543	Prince Albert.....	17,149	20,366
Wheatley.....	1,021	1,196	Radville.....	973	1,087
Whitby.....	7,267	9,995	* Regina.....	71,319	89,755
Wiarion.....	1,955	1,954	Rosetown.....	1,865	2,262
Winchester.....	1,201	1,338	Rosthern.....	1,183	1,268
Windsor.....	120,049	121,980	Saskatoon.....	53,268	72,858
Wingham.....	2,642	2,766	Shaunavon.....	1,625	1,959
Woodbridge.....	1,699	1,958	Swift Current.....	7,458	10,612
Woodstock.....	15,544	18,347	Tisdale.....	2,141	2,104
			Unity.....	1,248	1,607
Manitoba—			Wadena.....	1,081	1,154
Altona.....	1,438	1,698	Watrous.....	1,228	1,340
Beauséjour.....	1,376	1,523	Weyburn.....	7,148	7,684
Boissevain.....	1,015	1,115	Wielkie.....	1,580	1,630
Brandon.....	20,598	24,796	Wolseley.....	983	1,001
Brooklands.....	2,915	3,941	Wynyard.....	1,326	1,522
Carberry.....	912	1,065	Yorkton.....	7,074	8,256
Carman.....	1,867	1,884			
Dauphin.....	6,007	6,190	Alberta—		
Flin Flon.....	9,899	10,234	Athabasca.....	1,068	1,293
Gimli.....	1,324	1,660	Barrhead.....	1,243	1,610
Killarney.....	1,262	1,434	Beverly.....	2,159	4,602
Minnedosa.....	2,085	2,306	Blairmore.....	1,933	1,973
Morden.....	1,862	2,237	Bonnyville.....	1,139	1,495
Morris.....	1,193	1,260	Bow Island.....	653	1,001
Neepawa.....	2,895	3,109	Bowness.....	2,922	6,217
Portage la Prairie.....	8,511	10,525	Brooks.....	1,648	2,320
Powerview.....	1,075	1,078	Calgary.....	129,060	181,780
Rivers.....	1,209	1,422	Camrose.....	4,131	5,817
Roblin.....	1,055	1,173	Cardston.....	2,487	2,607
Russell.....	1,100	1,227	Claresholm.....	1,608	2,431
St. Boniface.....	26,342	28,851	Coaldale.....	806	2,327
St. James.....	19,561 ¹	26,502	Cold Lake.....	1	1,097
Selkirk.....	6,218	7,413	Coleman.....	1,961	1,566
Souris.....	1,584	1,759	Devon.....	842	1,429
Steinbach.....	2,155	2,688	Didsbury.....	1,180	1,227
Stonewall.....	1,040	1,110	Drayton Valley.....	1	2,588
Swan River.....	2,290	2,644	Drumheller.....	2,601	2,632
The Pas.....	3,376	3,971	* Edmonton.....	159,631	226,002
Transcona.....	6,752	8,312	Edson.....	1,956	2,560
Tuxedo.....	1,627	1,163	Fairview.....	929	1,260
Virten.....	1,746	3,225	Forest Lawn.....	1,079	3,150
Winkler.....	1,331	1,634	Fort Macleod.....	1,860	2,103
* Winnipeg.....	235,710	255,093	Fort Saskatchewan.....	1,076	2,582
			Grande Prairie.....	2,664	6,302
Saskatchewan—			Hanna.....	2,027	2,327
Assiniboia.....	1,933	2,027	High Prairie.....	1,141	1,743
Battleford.....	1,319	1,498	High River.....	1,888	2,102
Biggar.....	2,214	2,424	Innisfail.....	1,417	1,883
Canora.....	1,568	1,873	Jasper Place.....	9,139	15,957
Creighton.....	1	1,659	Lacombe.....	2,277	2,747
Estevan.....	3,935	5,264	Leduc.....	1,842	2,008
Eston.....	1,301	1,625	Lethbridge.....	22,947	29,462
Fort Qu'Appelle.....	878	1,130	Magrath.....	1,320	1,382
Gravelbourg.....	1,197	1,434	McLennan.....	1,074	1,092
Grenfell.....	1,007	1,080	McMurray.....	926	1,110
Gull Lake.....	728	1,052	Medicine Hat.....	16,364	20,826
Hudson Bay.....	1,115	1,421	Nanton.....	934	1,047
Humboldt.....	2,435	2,916	Olds.....	1,617	1,980
Indian Head.....	1,569	1,721	Peace River.....	1,672	2,034
Kamsack.....	2,327	2,843	Pincher Creek.....	1,456	1,729
Kerrobert.....	807	1,037	Ponoka.....	2,574	3,387
Kindersley.....	1,755	2,572	Raymond.....	2,279	2,399
Leader.....	835	1,085	Redcliff.....	1,538	2,001
Lloydminster.....	3,938	5,077	Red Deer.....	7,575	12,338
Maple Creek.....	1,638	1,974	Redwater.....	1,306	1,065
Meadow Lake.....	1,956	2,477	Rocky Mountain House.....	1,147	1,285

8.—Incorporated Cities, Towns and Villages having Populations of 1,000 or Over in 1956, by Province, with Comparable Data for 1951—concluded

Province and Incorporated Centre	1951	1956	Province or Territory and Incorporated Centre	1951	1956
	No.	No.		No.	No.
Alberta—concluded			British Columbia—concluded		
St. Albert.....	1,129	1,320	Lake Cowichan.....	1,628	1,949
St. Paul.....	1,407	2,229	Langley.....	1	2,131
Stettler.....	2,442	3,359	Lillooet.....	469	1,083
Stony Plain.....	878	1,098	Merritt.....	1,251	1,790
Sylvan Lake.....	985	1,114	Mission City.....	2,668	3,010
Taber.....	3,042	3,688	Nanaimo.....	7,196	12,705
Three Hills.....	1,026	1,095	Nelson.....	6,772	7,226
Vegreville.....	2,223	2,574	New Westminster.....	28,639	31,665
Vermilion.....	1,982	2,196	North Kamloops.....	1,979	4,398
Vulcan.....	1,040	1,204	North Vancouver.....	15,687	19,951
Wainwright.....	1,996	2,653	Oliver.....	1,000	1,147
Westlock.....	1,111	1,136	Parksville.....	882	1,112
Wetaskiwin.....	3,824	4,476	Penticton.....	10,548	11,894
British Columbia—			Port Alberni.....	7,845	10,373
Alberni.....	3,323	3,947	Port Coquitlam.....	3,232	4,632
Armstrong.....	1,126	1,197	Port Moody.....	2,246	2,713
Burns Lake.....	801	1,016	Prince George.....	4,703	10,563
Campbell River.....	1,986	3,069	Prince Rupert.....	8,546	10,498
Castlegar.....	1,329	1,705	Princeton.....	1	2,245
Chilliwack.....	5,663	7,297	Quesnel.....	1,587	4,384
Comox.....	714	1,151	Revelstoke.....	2,917	3,469
Courtenay.....	2,553	3,025	Rossland.....	4,604	4,344
Cranbrook.....	3,621	4,562	Salmon Arm.....	1,201	1,344
Creston.....	1,626	1,844	Sidney.....	1	1,371
Cumberland.....	971	1,039	Smithers.....	1,204	1,962
Dawson Creek.....	3,589	7,531	Squamish.....	589	1,292
Duncan.....	2,784	3,247	Terrace.....	961	1,473
Fernie.....	2,551	2,808	Trail.....	11,430	11,395
Fort St. John.....	894	1,908	Vancouver.....	344,833	365,844
Grand Forks.....	1,646	1,995	Vanderhoof.....	644	1,085
Hope.....	1,668	2,226	Vernon.....	7,822	8,998
Kamloops.....	8,099	9,096	*Victoria.....	51,331	54,584
Kelowna.....	8,517	9,181	Warfield.....	1	2,051
Kimberley.....	5,933	5,774	Williams Lake.....	913	1,790
Kinaird.....	947	1,305	Yukon Territory—		
Ladysmith.....	2,094	2,107	*Whitehorse.....	2,594	2,570

¹ Not incorporated in 1951. ² Towns of Corner Brook E., Corner Brook W. and Curling amalgamated to form part of Corner Brook city Jan. 1, 1956. ³ Rural district in 1951. ⁴ Rural municipality of St. Léonard de Port Maurice in 1951. ⁵ Rural municipality in 1951. ⁶ Previous to 1953 called Lac St. Louis. ⁷ Rural municipality of St. Joseph de la Rivière des Prairies in 1951. ⁸ Rural municipality of St. Joseph in 1951. ⁹ Previous to June 16, 1951 called Beauport E. ¹⁰ Improvement district in 1951.

Subsection 4.—Sex and Age Distribution

Sex.—The sex distribution of the Canadian people has been characterized since early colonial times by a preponderance of males although this condition has been greatly modified in more recent years. In 1666 during the early years of settlement by French immigrants 63.3 p.c. of the population were males. In 1784 when British immigration to Canada was commencing there were 54,064 males and 50,759 females and by the middle of the nineteenth century there were 449,967 males to 440,294 females in Lower Canada and 499,067 males to 452,937 females in the more newly settled Upper Canada.

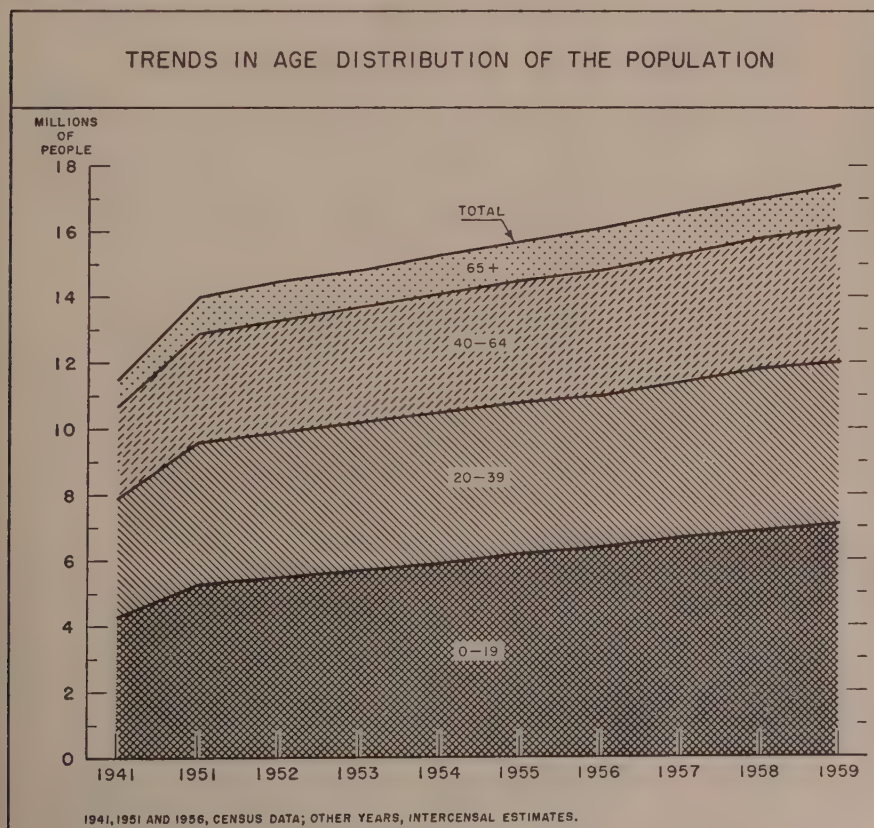
Since Confederation the newer sections of Canada—the west and the northwest—have shown the greatest excess of males. From 1871 to 1941, for Canada as a whole, the proportion of males never dropped below 51 p.c. of the total population whereas for Western Canada it varied between 53 p.c. and 59 p.c. By 1951, however, the proportion of males to the total population had dropped to 50.6 p.c. for Canada as a whole and in 1956 was 50.7 p.c.

9.—Sex Distribution of the Population, by Province, Census Years 1941, 1951 and 1956

NOTE.—Figures for the census years 1871–1931 are given in the 1948–49 Year Book, p. 150.

Province or Territory	1941		1951		1956	
	Male	Female	Male	Female	Male	Female
	No.	No.	No.	No.	No.	No.
Newfoundland.....	...	...	185,143	176,273	213,905	201,189
Prince Edward Island.....	49,228	45,819	50,218	48,211	50,510	48,775
Nova Scotia.....	296,044	281,918	324,955	317,629	353,182	341,535
New Brunswick.....	234,097	223,304	259,211	256,486	279,590	275,026
Quebec.....	1,672,982	1,658,900	2,022,127	2,033,554	2,317,677	2,310,701
Ontario.....	1,921,201	1,866,454	2,314,170	2,283,372	2,721,519	2,683,414
Manitoba.....	378,079	351,665	394,818	381,723	432,478	417,562
Saskatchewan.....	477,563	418,429	434,568	397,160	458,428	422,237
Alberta.....	426,458	369,711	492,192	447,309	585,921	537,195
British Columbia.....	435,031	382,830	596,961	568,249	720,516	677,948
Yukon Territory.....	3,153	1,761	5,457	3,639	6,924	5,266
Northwest Territories.....	6,700	5,328	9,053	6,951	11,229	8,084
Canada.....	5,900,536	5,606,119	7,088,873	6,920,556	8,151,879	7,928,912

Age.—The age distribution of a population is fundamental to most, if not all, other analyses, for the age factor influences employment, marriage, birth rates and death rates, education, immigration, criminology, and a multitude of events and activities that are of great importance in the national life.



Recent trends in vital rates and immigration have considerably changed the age composition of the population of Canada. A high birth rate together with a low death rate among children added, between 1951 and 1956, nearly 1,000,000 to the population under 15 years of age and raised the proportion of this group to the total population from 30.3 p.c. to 32.5 p.c. On the other hand, the relative proportion of the working-age groups—persons from 15 to 64 years of age—was 2 p.c. lower at 59.8 p.c. in 1956 than in 1951 when 61.9 p.c. were in this age group. Without the influx of immigrants during the 1951-56 period, the proportion of this productive group would have been much lower since a large part of it consists of the survivors of those born in the 1930's when birth rates were at their lowest. The proportion of persons 65 years of age or over was slightly less than 8 p.c. at both census dates.

Table 10 shows the population of Canada classified by five-year age groups and sex for the census years 1941, 1951 and 1956. The provincial distribution by specified age groups as recorded in the 1956 Census is shown in Table 11.

10.—Male and Female Populations, by Age Group, Census Years 1941, 1951 and 1956

Age Group	1941		1951		1956	
	Male	Female	Male	Female	Male	Female
	No.	No.	No.	No.	No.	No.
0 - 4 years.....	533,903	517,951	879,063	843,046	1,011,835	971,728
5 - 9 "	529,092	516,728	713,873	683,952	919,952	887,101
10 - 14 "	556,304	544,573	575,122	555,661	732,032	702,562
15 - 19 "	565,212	554,823	532,180	525,792	586,635	575,666
20 - 24 "	517,956	514,470	537,535	551,106	567,179	561,931
25 - 29 "	488,340	478,650	552,812	578,403	605,836	592,301
30 - 34 "	431,591	412,255	512,557	530,177	602,535	613,750
35 - 39 "	396,453	363,101	503,571	495,562	555,763	558,622
40 - 44 "	348,616	327,929	445,800	422,767	522,615	502,784
45 - 49 "	332,503	302,643	387,708	356,971	455,827	422,988
50 - 54 "	315,866	275,838	340,461	322,195	381,835	351,215
55 - 59 "	275,234	231,658	292,564	278,126	321,973	307,271
60 - 64 "	218,557	188,594	264,324	241,828	265,652	259,265
65 - 69 "	162,517	145,207	228,076	205,421	237,551	226,562
70 - 74 "	111,152	105,949	160,398	154,674	187,490	183,218
75 - 79 "	67,200	68,495	94,130	94,261	113,550	113,948
80 - 84 "	34,083	37,431	45,963	50,828	55,636	61,460
85 - 89 "	12,021	15,015	17,539	22,060	21,688	26,670
90 years or over.....	3,336	4,809	5,197	7,726	6,295	9,870
Totals.....	5,900,536	5,606,119	7,088,873	6,920,556	8,151,879	7,928,912

11.—Age Distribution of the Population, by Province, Census 1956

Province or Territory	0-4 Years	5-9 Years	10-14 Years	15-19 Years	20-24 Years	25-34 Years
	No.	No.	No.	No.	No.	No.
Newfoundland.....	63,374	59,539	45,997	35,660	30,018	52,207
Prince Edward Island.....	12,285	12,521	9,828	8,190	6,147	11,002
Nova Scotia.....	85,972	82,033	67,566	56,326	49,069	90,428
New Brunswick.....	74,299	73,034	57,938	47,048	36,421	69,286
Quebec.....	597,728	556,621	467,237	370,246	353,191	707,106
Ontario.....	628,825	563,678	425,922	346,850	365,160	856,108
Manitoba.....	100,367	91,460	72,516	60,427	57,674	121,608
Saskatchewan.....	109,603	97,953	79,214	68,359	58,992	120,182
Alberta.....	149,697	125,820	97,318	80,486	82,842	173,475
British Columbia.....	156,759	140,588	108,518	86,433	86,397	206,736
Yukon Territory.....	1,847	1,335	795	623	1,134	2,739
Northwest Territories.....	2,807	2,471	1,745	1,653	2,065	3,545
Canada.....	1,983,563	1,807,053	1,434,594	1,162,301	1,129,110	2,414,422
	35-44 Years	45-54 Years	55-64 Years	65-69 Years	70+ Years	All Ages
	No.	No.	No.	No.	No.	No.
Newfoundland.....	47,866	32,441	23,183	8,911	15,878	415,074
Prince Edward Island.....	11,688	9,335	7,939	3,325	7,025	99,285
Nova Scotia.....	89,889	65,755	48,772	19,926	38,981	694,717
New Brunswick.....	66,500	49,607	37,291	15,348	27,844	554,616
Quebec.....	587,601	436,476	288,149	103,607	160,416	4,628,378
Ontario.....	751,882	581,506	430,627	167,371	287,004	5,404,933
Manitoba.....	115,396	87,941	66,084	29,240	47,327	850,040
Saskatchewan.....	114,626	87,351	65,739	30,108	48,538	880,665
Alberta.....	148,334	108,779	75,035	31,796	49,551	1,123,116
British Columbia.....	202,907	150,188	110,059	54,078	96,701	1,398,464
Yukon Territory.....	1,747	1,004	476	191	299	12,190
Northwest Territories.....	2,248	1,482	804	212	281	19,313
Canada.....	2,139,784	1,611,865	1,154,161	464,113	779,825	16,080,791

Subsection 5.—Marital Status

Next to the sex and age distribution of a population, that of marital status is probably most fundamental from a vital, economic and social viewpoint. The number of married females between 15 and 45 years of age is a most significant factor in the fertility of a population; if the proportion of females in this group is small, the expected proportion of births will also be small. In 1956, 64.3 p.c. of all married females were in the age group 15-44 years, as compared with 64.0 p.c. in 1951, 61.2 p.c. in 1941, and 63.5 p.c. in 1931. This trend indicates a movement towards conditions more favourable to a higher birth rate than those that existed during the period of world-wide depression.

The high birth rate of the period 1951-56, which has had such a decided effect on the increase in the total population and on its age composition, has also been an influence on the increase of 15.7 p.c. in the unmarried population. Most of this gain was in the population under 15 years of age. During the same period, the married population increased by 14.1 p.c., widowed by 10.5 p.c., and divorced by 14.9 p.c. Other striking statistics of marital status are the excess of married males over married females (largely owing to a preponderance of male immigrants whose wives had not yet joined them), the great preponderance of widows as compared to widowers, and the large and increasing number of divorced persons.

12.—Marital Status of the Population, by Age Group and Sex, Census 1956

Age Group and Sex		Single	Married	Widowed	Divorced	Total
		No.	No.	No.	No.	No.
Under 15 years	M.	2,663,819	—	—	—	2,663,819
	F.	2,561,391	—	—	—	2,561,391
	T.	5,225,210	—	—	—	5,225,210
15 - 19 "	M.	580,203	6,382	39	11	586,635
	F.	527,136	48,384	99	47	575,666
	T.	1,107,339	54,766	138	58	1,162,301
20 - 24 "	M.	409,245	157,574	186	174	567,179
	F.	248,766	311,640	858	667	561,931
	T.	658,011	469,214	1,044	841	1,129,110
25 - 34 "	M.	318,489	885,563	2,092	2,227	1,208,371
	F.	179,181	1,013,756	8,119	4,995	1,206,051
	T.	497,670	1,899,319	10,211	7,222	2,414,422
35 - 44 "	M.	140,684	926,988	6,751	3,955	1,078,378
	F.	110,532	914,906	28,368	7,600	1,061,406
	T.	251,216	1,841,894	35,119	11,555	2,139,784
45 - 54 "	M.	102,230	714,831	16,533	4,068	837,662
	F.	84,348	622,030	62,389	5,436	774,203
	T.	186,578	1,336,861	78,922	9,504	1,611,865
55 - 64 "	M.	70,075	480,954	33,951	2,645	587,625
	F.	57,006	392,000	115,309	2,221	566,536
	T.	127,081	872,954	149,260	4,866	1,154,161
65 - 69 "	M.	27,491	180,721	28,427	912	237,551
	F.	21,638	126,693	77,765	466	226,562
	T.	49,129	307,414	106,192	1,378	464,113
70 years or over.....	M.	43,344	233,628	106,743	944	384,659
	F.	40,561	130,623	223,582	400	395,166
	T.	83,905	364,251	330,325	1,344	779,825
All Ages.....	M.	4,355,580	3,586,641	194,722	14,936	8,151,879
	F.	3,830,559	3,560,032	516,489	21,832	7,928,912
	T.	8,186,139	7,146,673	711,211	36,768	16,080,791

Subsection 6.—Origins and Birthplaces

Origins.—A population composed of diverse racial stocks gives rise to political, economic and social problems quite different in nature from those of one with a small admixture of foreign elements although, to the extent that certain racial stocks are more readily assimilated than others, the problems are mitigated. It is equally true that the different educational, moral, economic, religious and political backgrounds of a people of mixed origins lend variety and diversity to the national life.

The two basic stocks of the Canadian people are the French and the English; historically the French is much the older and, excepting at the time of the 1921 Census, has always exceeded in numbers any one of the basic British stocks.

For purposes of the census, a person's origin or cultural group is traced through his father. For example if a person's father is German and his mother Norwegian the origin is entered as "German". Wherever possible the origin of a person is established by asking the language spoken by the person or by his paternal ancestor when he first came to Canada.

Census of 1951 data are the latest available on origins of the population.

13.—Origins of the Population, Census Years 1931, 1941 and 1951

NOTE.—Figures for census years 1871-1921 are given in the 1948-49 Year Book, p. 154.

Origin	1931	1941	1951	Origin	1931	1941	1951
No.	No.	No.	No.	No.	No.	No.	No.
British	5,381,071	5,715,904	6,709,685	Other European—			
English.....	2,741,419	2,968,402	3,630,344	concluded			
Irish.....	1,230,808	1,267,702	1,439,635	Romanian.....	29,056	24,689	23,601
Scottish.....	1,346,350	1,403,974	1,547,470	Russian.....	88,148	83,708	91,279
Other.....	62,494	75,826	92,236	Swedish.....	81,306	85,396	97,780
Other European	4,753,242	5,526,964	6,872,889	Ukrainian.....	225,113	305,929	395,043
French.....	2,927,990	3,483,038	4,319,167	Yugoslavic.....	16,174	21,214	21,404
Austrian.....	48,639	37,715	32,231	Other.....	9,392	9,787	35,616
Belgian.....	27,585	29,711	35,148	Asiatic	84,548	74,064	72,827
Czech and Slovak.....	30,401	42,912	63,959	Chinese.....	46,519	34,627	32,528
Danish.....	34,118	37,439	42,671	Japanese.....	23,342	23,149	21,663
Finnish.....	43,885	41,683	43,745	Other.....	14,687	16,288	18,636
German.....	473,544	464,682	619,995	Other Origins	157,925	189,723	354,028
Greek.....	9,444	11,692	13,966	Native Indian and			
Hungarian.....	40,582	54,598	60,460	Eskimo.....	128,890	125,521	165,607
Icelandic.....	19,382	21,050	23,307	Negro.....	19,456	22,174	18,020
Italian.....	98,173	112,625	152,245	Other and not			
Jewish.....	156,726	170,241	181,670	stated.....	9,579	42,028 ¹	170,401
Lithuanian.....	5,876	7,789	16,224	Totals	10,376,786	11,506,655	14,009,429
Netherlands.....	148,962	212,863	264,267				
Norwegian.....	93,243	100,718	119,266				
Polish.....	145,503	167,485	219,845				

¹ Includes 35,416 half-breeds.

Countries of Birth.—The decennial census collects information on the country of birth of immigrant arrivals in Canada and province of birth of Canadian born. For persons born outside of Canada the country of birth as constituted at the date of the census is recorded. Table 14 gives the total population by countries of birth for the census years 1931, 1941 and 1951.

14.—Countries of Birth of the Population, Census Years 1931, 1941 and 1951

NOTE.—Figures for census years 1871-1921 are given in the 1948-49 Year Book, p. 158.

Country of Birth	1931	1941	1951	Country of Birth	1931	1941	1951
No.	No.	No.	No.	No.	No.	No.	No.
Canada	8,069,261	9,487,808	11,949,518	Europe—concluded			
United Kingdom.....	1,138,942 ¹	960,125 ¹	912,482	Union of Soviet Socialist Republics ² ..	133,869	124,402	188,292
Other Commonwealth.....	45,888	43,644	20,567	Scandinavian countries ³	90,042	72,473	64,522
Europe.....	714,462	653,705	801,618	Central European countries ⁴	317,350	309,360	305,192
Belgium.....	17,033	14,773	17,251	Other Europe.....	11,002	9,810	38,143
Finland.....	30,354	24,387	22,035	Asia.....	60,608	44,443	37,145
France.....	16,756	13,795	15,650	United States.....	344,574	312,473	282,010
Germany.....	39,163	28,479	42,693	Other countries.....	3,051	3,512	6,089
Greece.....	5,579	8,871	8,594	Totals	10,376,786	11,506,655⁵	14,009,429
Italy.....	42,578	40,432	57,789				
Netherlands.....	10,736	9,923	41,457				

¹ Includes the 26 counties of Ireland in 1931 and 1941.² Includes Lithuania and Ukraine.³ Includes Denmark, Iceland, Norway and Sweden.⁴ Includes Austria, Czechoslovakia, Hungary, Yugoslavia, Poland and Romania.⁵ Includes "birthplace not stated".

Subsection 7.—Religious Denominations

At each decennial census the numbers of persons attached to any religious denomination, as reported by the persons enumerated, have been recorded. The distribution of the principal denominations for the census years 1931, 1941 and 1951 is given in Table 15. No later data are available.

15.—Principal Religious Denominations of the Population, Census Years 1931, 1941 and 1951

NOTE.—More detailed figures for census years 1871–1921 are given in the 1948–49 Year Book, p. 155.

Religious Denomination	1931	1941	1951		Religious Denomination	1931	1941	1951	
	No.	No.	No.	p.c.		No.	No.	No.	p.c.
Adventist	16,058	18,485	21,398	0.2	Pentecostal	26,349	57,742	95,131	0.7
Anglican	1,639,075	1,754,368	2,060,720	14.7	Presbyterian	872,428	830,597	781,747	5.6
Baptist	443,944	484,465	519,585	3.7	Roman Catholic	4,102,960	4,806,431	6,069,496	43.3
Christian Science	18,499	20,261	20,795	0.1	Salvation Army	30,773	33,609	70,275	0.5
Evangelical					Ukrainian				
Church	22,239	37,064	50,900	0.4	(Greek) Catholic	186,879 ²	185,948 ²	190,831	1.4
Greek Orthodox	102,529	139,845	172,271	1.2	United Church	2,021,065	2,208,658	2,867,271	20.5
Jewish	155,766	168,585	204,836	1.5	Other	232,424	221,879	280,424	2.0
Lutheran	394,920	401,836	444,923	3.2					
Mennonite ¹	88,837	111,554	125,938	0.9					
Mormon	22,041	25,328	32,888	0.2	Totals	10,376,786	11,506,655	14,009,429	100.0

¹ Includes "Hutterite".

² Includes "Other Greek Catholic".

Subsection 8.—Languages and Mother Tongues

Tables showing the numbers of persons speaking one, both or neither of the official languages of Canada and showing mother tongues of the population at the date of the 1951 Census are given in the 1957-58 Year Book at pp. 138-139. Further details may be found in Vol. I of the 1951 Census of Canada.

Subsection 9.—Households, Families and Dwellings*

Households and Families.—Only the principal statistics on households and families recorded at the Census of 1956 are given here—additional summary figures are given in the 1957-58 Year Book at pp. 141-143 and detailed information may be found in 1956 Census Bulletins 1-13 to 1-20 inclusive (Catalogue Nos. 93-501 to 93-508).

The total number and average size of households and families for census years 1951 and 1956 are shown in Table 16 for provinces and for cities of 30,000 population or over. These figures show a consistent trend towards larger families in 1956 as compared with 1951, although the average size of household remained relatively stable over the five-year period.

* Census definitions are briefly as follows: **DWELLING.**—A *Dwelling* is defined as a structurally separate set of living premises with private entrance from outside the building, or from a common hallway or stairway inside. A *Single Detached Dwelling* is a house containing one dwelling unit and completely separated from any other building. *Apartments and Flats* include dwelling units in apartment blocks, in duplexes or triplexes, and in structurally converted houses, and living quarters in business premises, schools, etc. In determining the number of *Rooms* in a dwelling, only those suitable for living purposes are included. A *Crowded Dwelling* is defined as one in which the number of persons exceeds the number of rooms occupied.

HOUSEHOLD.—A *Household* is a person or group of persons occupying one dwelling unit, the number of households thus equalling the number of occupied dwellings.

FAMILY.—A *Family* is a husband and wife (with or without children) or a parent with an unmarried child (or children) living together in the same dwelling. Unmarried sons and daughters under 25 years of age and living with their parents are classed as children, as are wards and guardianship children under 21 years of age.

16.—Households and Families, and Persons per Household and Family, by Province and City of 30,000 Population or Over, Census Years 1951 and 1956

Province and City	Households		Families		Persons per Household		Persons per Family	
	1951 ¹	1956 ¹	1951 ¹	1956	1951 ¹	1956 ¹	1951	1956
	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland	70,980	78,808	74,858	82,128	5.0	5.1	4.4	4.6
St. John's.....	10,572	11,219	11,427	12,163	4.8	4.9	4.0	4.1
Prince Edward Island ...	22,454	22,682	21,381	21,153	4.3	4.2	4.0	4.1
Nova Scotia	149,555	162,854	145,127	154,243	4.2	4.1	3.9	3.9
Halifax.....	18,709	21,194	19,016	20,509	4.1	4.0	3.5	3.5
Sydney.....	6,324	6,914	7,080	7,092	4.8	4.5	3.9	4.0
New Brunswick	114,007	120,475	111,639	116,623	4.4	4.5	4.1	4.2
Moncton.....	6,595	8,647	6,424	8,286	4.0	4.0	3.5	3.7
Saint John.....	13,178	13,336	12,224	12,230	3.8	3.8	3.5	3.6
Quebec	858,784	1,001,264	856,041	970,414	4.6	4.4	4.2	4.2
Hull.....	9,324	11,167	9,916	11,240	4.6	4.3	4.0	4.0
Jacques Cartier.....	4,779	6,927	4,908	7,011	4.7	4.8	4.3	4.5
Lachine.....	6,385	8,557	6,751	8,588	4.1	3.9	3.6	3.6
Montreal.....	247,482	285,501	246,389	267,934	4.0	3.7	3.5	3.5
Quebec.....	34,970	38,556	33,830	35,996	4.4	4.2	4.1	4.0
St. Laurent.....	4,976	9,304	5,039	9,148	3.9	4.0	3.6	3.8
Sherbrooke.....	11,543	13,646	11,034	12,595	4.1	4.1	3.9	4.1
Trois Rivières.....	9,528	10,912	9,466	10,464	4.6	4.4	4.3	4.2
Verdun.....	19,806	21,009	20,123	20,293	3.8	3.6	3.4	3.4
Ontario	1,181,126	1,392,491	1,162,772	1,342,572	3.8	3.8	3.4	3.5
Brantford.....	10,373	14,642	9,774	13,494	3.5	3.5	3.2	3.4
Fort William.....	9,297	10,118	9,015	9,926	3.7	3.7	3.4	3.5
Guelph.....	7,104	9,284	7,084	8,597	3.8	3.5	3.3	3.4
Hamilton.....	55,337	63,815	55,764	62,329	3.7	3.7	3.2	3.3
Kingston.....	8,708	12,499	8,485	11,352	3.7	3.6	3.2	3.4
Kitchener.....	11,571	16,074	11,832	15,539	3.8	3.6	3.2	3.4
London.....	26,384	28,962	24,679	25,277	3.5	3.3	3.1	3.3
Oshawa.....	11,225	13,530	11,170	13,335	3.7	3.7	3.2	3.4
Ottawa.....	48,968	56,059	48,811	52,760	3.9	3.8	3.4	3.5
Peterborough.....	10,018	11,632	9,807	10,671	3.8	3.6	3.4	3.5
Port Arthur.....	8,426	9,979	8,082	9,442	3.6	3.6	3.4	3.5
St. Catharines.....	10,383	10,971	10,051	10,257	3.6	3.5	3.3	3.3
Sarnia.....	9,380	11,917	8,953	10,980	3.7	3.6	3.4	3.6
Sault Ste. Marie.....	7,856	9,169	8,124	9,127	4.1	3.9	3.5	3.6
Sudbury.....	9,452	11,526	9,978	11,092	4.4	3.9	3.7	3.6
Toronto.....	157,174	157,137	177,984	169,971	4.2	4.1	3.0	3.1
Windsor.....	31,813	33,280	30,855	30,786	3.7	3.6	3.4	3.4
Manitoba	202,398	217,964	191,268	204,414	3.7	3.7	3.6	3.6
Winnipeg.....	64,629	67,798	63,117	66,019	3.6	3.6	3.1	3.2
Saskatchewan	221,456	233,664	196,188	205,135	3.7	3.6	3.7	3.8
Regina.....	19,161	23,863	18,229	22,313	3.6	3.6	3.3	3.4
Saskatoon.....	14,982	20,315	13,639	18,065	3.4	3.4	3.3	3.4
Alberta	250,747	294,047	223,326	262,922	3.6	3.7	3.7	3.7
Calgary.....	37,711	52,785	34,053	46,176	3.3	3.3	3.2	3.3
Edmonton.....	42,922	57,748	40,278	55,525	3.6	3.7	3.3	3.5
British Columbia	337,777	392,403	299,845	346,003	3.3	3.4	3.3	3.4
New Westminster.....	7,984	8,874	7,278	7,711	3.3	3.2	3.2	3.3
Vancouver.....	101,830	108,953	92,798	94,467	3.3	3.2	3.0	3.1
Victoria.....	15,788	17,309	13,632	14,041	3.1	3.0	3.0	3.0
Yukon and Northwest Territories.....	..	6,994	4,939	5,893	..	3.8	3.9	4.1
Canada	3,409,284²	3,923,646	3,287,384	3,711,500	4.0²	3.9	3.7	3.8

¹ Exclusive of institutions, hotels, camps, etc.² Exclusive of the Yukon and Northwest Territories.

In Table 17 households are classified according to the number of persons, the number of family groups, and the number of lodgers they contain. This information is shown for Canada as a whole with comparable figures from the 1951 and 1956 Censuses. It will be seen that the two-person household was the most common household size in both years, and in 1956 two-person households represented nearly 22 p.c. of all households. The percentage of multiple-family households and households with lodgers showed a decrease between 1951 and 1956. This is consistent with the fact previously stated that, although families showed a noticeable increase in size between 1951 and 1956, there was no corresponding increase in size of household. (For later sample-survey figures on families, see p. 199.)

17.—Household Composition, Census Years 1951 and 1956

Item	1951 ¹		1956	
	No.	p.c.	No.	p.c.
Persons in Households—				
1.....	252,435	7.4	308,613	7.9
2.....	711,110	20.9	859,109	21.9
3.....	688,025	20.2	739,390	18.8
4.....	645,515	18.9	742,363	18.9
5.....	439,875	12.9	513,821	13.1
6-9.....	581,675	17.1	664,366	16.9
10+.....	90,660	2.7	95,984	2.4
Families in Households—				
0.....	385,010	11.3	459,420	11.7
1.....	2,794,860	83.0	3,259,499	83.1
2+.....	229,425	6.7	204,727	5.2
Lodgers in Households—				
0.....	3,081,085	90.4	3,610,238	92.0
1.....	171,310	5.0	162,067	4.1
2.....	73,480	2.2	68,950	1.8
3+.....	83,420	2.4	82,391	2.1

¹ Exclusive of the Yukon and Northwest Territories.

Dwellings.—Since a census of housing was not taken in 1956, the latest census information on dwellings is for the year 1951. Table 18 indicates the changes that took place in certain dwelling characteristics during the decade 1941 to 1951.

Statistics relating to household conveniences in 1951 generally reflect an increasing level of prosperity in both urban and rural areas within the 1941-51 period. In 1951 over 60 p.c. more homes had indoor plumbing, electricity and furnace heating than in 1941. There was also a substantial increase in the number of homes equipped with such conveniences as mechanical refrigerators, electric vacuum cleaners, telephones, radios and passenger automobiles. While much of this advance may be attributed to general prosperity, part of the trend is accounted for by increasing urbanization of the Canadian population and the availability of modern conveniences to rural areas. (For later sample-survey figures on household conveniences, see p. 199.)

18.—Dwelling Characteristics, Census Years 1941 and 1951

(Excludes Newfoundland and the Territories)

Characteristics	1941		1951		Increase 1941-51	
	No.	P.C. of Total	No.	P.C. of Total	No.	P.C.
Occupied Dwellings¹	2,575,744	100.0	3,338,315	100.0	762,571	29.6
Single detached.....	1,853,454	72.0	2,216,275	66.4	362,821	19.6
Apartments and flats.....	533,034	20.7	831,245	26.4	348,211	65.3
Single attached.....	189,256	7.3	240,795 ²	7.2	51,539	27.2
Owned.....	1,459,357	56.7	2,175,415	65.2	716,058	49.1
Rented.....	1,116,387	43.3	1,162,900	34.8	46,513	4.2
Rooms per dwelling.....	5.5	...	5.3	...	...	...
Persons per dwelling.....	4.3	...	4.0	...	...	...
In need of major repair.....	695,736	27.0	450,625	13.5	-245,111	-35.2
Crowded dwellings ³	148,418	18.4	175,995	16.0	27,577	18.6
Dwellings with—						
Electric lighting.....	1,780,667	69.1	2,929,450	87.8	1,148,783	64.5
Furnace heating.....	997,588	38.7	1,632,275	48.9	634,687	63.6
Running water.....	1,558,586	60.5	2,503,080	75.0	944,494	60.6
Flush toilet ⁴	1,342,198	52.1	2,170,815	65.0	828,617	61.7
Bath or shower ⁴	1,169,760	45.4	1,926,455	57.7	756,695	64.7
Electric or gas range.....	1,019,421	39.6	1,696,130	50.8	676,709	66.4
Electric or gas refrigeration.....	538,535	20.9	1,589,625	47.6	1,051,090	195.2
Electric vacuum cleaner.....	624,178	24.2	1,409,090	42.2	784,912	125.8
Telephone.....	1,037,298	40.3	2,013,640	60.3	976,342	94.1
Radio.....	2,002,889	77.8	3,086,695	92.5	1,083,806	54.1
Passenger automobile.....	944,591	36.7	1,435,925	43.0	491,334	52.0
Owner-occupied non-farm dwellings report- ing a mortgage.....	275,623	31.2	515,035	32.3	239,412	86.9
Monthly Rent of Tenant-Occupied Non- farm Dwellings—						
Under \$30 ⁵	738,294	75.1	501,540	45.5	-236,754	-32.1
\$30-\$59.....	221,189	22.5	437,815	39.8	216,626	97.9
\$60 or over.....	24,034	2.4	162,265	14.7	138,231	575.1

¹ Exclusive of hotels, institutions, camps, etc.miscellaneous types. ² For cities of 30,000 or over only.³ Includes auto-trailers, houseboats, tents and other

includes 'rent-free' dwellings.

⁴ For exclusive use of household.⁵ In-

Subsection 10.—Blind and Deaf Population

A table showing the number of totally blind and totally deaf persons in Canada at the time of the 1951 Census is given in the 1957-58 Year Book at p. 145. Further details on the blind and deaf population may be found in Vol. II of the 1951 Census of Canada. No later official information will be available until the 1961 Census.

Section 2.—Intercensal Surveys

Subsection 1.—Population Estimates and Movement

Intercensal estimates of the population have many uses. They are necessary to the calculation of costs of certain economic and social legislation. Business, educational and welfare organizations utilize population estimates in planning future development. They constitute a base for vital statistics rates, per capita figures of production and trade, and other analyses. They have proved useful for estimates of labour force and other population characteristics of data collected in sample surveys.

Estimates are constructed for the total population of Canada and for each province and become available about the date to which they apply—June 1 of each year. Population estimates by provinces are also available on a quarterly basis. The estimates of

population begin with the preceding census counts, to which are added the births of the intervening census year or years and from which the deaths are subtracted; immigrants are added and emigrants subtracted. On emigration no precise information is available. The DBS receives yearly from the United States the number of persons who gave Canada as country of last permanent residence before entering the United States as immigrants (see Chapter on Immigration and Citizenship, Part I, Section 3) and from the United Kingdom's Board of Trade the number of emigrants from Canada taking up permanent residence in the United Kingdom. Such data, however, are not available from other countries, though the proportion of total emigrants to all other countries is small. Family allowance statistics showing the number of migrant families by provinces are used in estimating interprovincial shifts in population.

The following statement shows the data used in preparing the annual estimates for 1957, 1958 and 1959. The next succeeding census serves as a basis for revision of the annual estimates.

Item	Period		
	1956-57	1956-58	1956-59
Population, Census 1956.....	16,081,000	16,081,000	16,081,000
Births.....	451,000	932,000	1,408,000
Deaths ¹	132,000	270,000	408,000
Immigration.....	257,000	449,000	564,000
Emigration (estimated).....	68,000	144,000	203,000
Population at end of period.....	16,589,000	17,048,000	17,442,000

¹ Final figures used where available and registrations substituted for remaining period.

19.—Estimates of Population, by Province, as at June 1, Intercensal Years 1941-59

NOTE.—At every census the previous post-census estimates, made at June 1 each year, are adjusted to the newly recorded population figures. Figures for all provinces for 1941, 1951 and 1956 and for the Prairie Provinces for 1946 are census figures. Figures for 1867-1904 will be found in the 1936 Year Book, p. 141; for 1905-30 in the 1946 edition, p. 127; and for 1931-40 in the 1952-53 edition, p. 143.

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Canada
	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000	'000
1941.....	...	95	578	457	3,332	3,788	730	896	796	818	5	12	11,507
1942.....	...	90	591	464	3,390	3,884	724	848	776	870	5	12	11,654
1943.....	...	91	606	463	3,457	3,915	723	838	785	900	5	12	11,704
1944.....	...	91	611	461	3,500	3,963	727	836	808	932	5	12	11,944
1945.....	...	92	619	467	3,560	4,000	727	833	808	949	5	12	12,072
1946.....	...	94	608	478	3,629	4,093	727	833	803	1,003	8	16	12,291
1947.....	...	94	615	488	3,710	4,176	739	836	825	1,044	8	16	12,551
1948.....	...	93	625	498	3,788	4,275	746	838	854	1,082	8	16	12,821
1949.....	345	94	629	508	3,882	4,378	757	832	885	1,113	8	16	13,441
1950.....	351	96	638	512	3,969	4,471	768	833	913	1,137	8	16	13,711
1951.....	361	98	643	516	4,056	4,598	776	832	939	1,165	9	16	14,001
1952.....	374	100	653	526	4,174	4,788	798	843	973	1,205	9	16	14,451
1953.....	383	101	663	533	4,269	4,941	809	861	1,012	1,248	9	16	14,841
1954.....	395	101	673	540	4,388	5,115	823	873	1,067	1,295	10	17	15,281
1955.....	406	100	683	547	4,517	5,266	839	878	1,091	1,342	11	18	15,691
1956.....	415	99	695	555	4,628	5,405	850	881	1,123	1,399	12	19	16,091
1957.....	426	99	702	565	4,758	5,622	860	879	1,160	1,487	12	19	16,581
1958.....	438	100	710	577	4,884	5,803	870	888	1,201	1,544	13	20	17,041
1959.....	449	102	716	590	4,999	5,952	885	902	1,243	1,570	13	21	17,441

Table 20 shows the natural increase and the total population increase according to the census for Canada and the provinces in the periods 1931-41, 1941-51 and 1951-56. The difference between the natural increase and the total increase in population during a period represents the difference between inward and outward movements, i.e., net migration. The net migration data shown for provinces indicate the net movement of population arising partly from interchange of population between provinces and partly from persons entering and leaving the country.

The earlier movement of population on the North American Continent from east to west has not been apparent since the 1920's. Although British Columbia has continued to show population gains from migration since 1931, much of this gain has been at the expense of the Prairie Provinces. While the three Prairie Provinces lost by migration about 248,000 persons between 1931 and 1941 and somewhat more from 1941 to 1951, they gained in the period 1951-56. Manitoba lost over 109,000 population between 1931 and 1951 but only 152 persons between 1951 and 1956. Saskatchewan has been a consistent loser since 1931, losing on the average over 15,000 a year during the 1930's, almost 20,000 a year during the 1940's and just under 8,000 a year during the 1950's. Alberta lost over 40,000 persons in the decade 1931-41 but only about 7,000 in the next decade and gained close to 65,000 in the five years 1951-56. British Columbia gained through migration at the rate of about 8,000 persons a year during the 1930's, about 23,000 a year during the 1940's and about 27,000 a year in the first half of the 1950's. On an absolute basis Ontario received more people through migration than did British Columbia but, in relation to its larger population, the gain was only about one-third as important. Most of Ontario's growth through migration was from immigration rather than interprovincial movement of population. Quebec had a slight loss between 1931 and 1951 and a considerable gain in the next five years. Nova Scotia gained population through migration during the 1930's but has been losing ever since; the Maritimes as a whole lost 138,000 persons over the quarter-century.

20.—Numerical Changes in the Population of the Provinces through Natural Increase and Migration 1931-41, 1941-51 and 1951-56

Province	Natural Increase			Population Increase according to Census			Net Migration		
	1931-41	1941-51	1951-56	1931-41	1941-51	1951-56	1931-41	1941-51	1951-56
Nfld.....	...	...	52,892	...	...	53,658	...	...	+766
P.E.I.....	9,681	15,802	8,920	7,009	3,382	856	-2,672	-12,420	-8,064
N.S.....	57,268	103,512	63,156	65,116	64,622	52,133	+7,848	-38,890	-11,023
N.B.....	59,359	99,904	59,812	49,182	58,296	38,919	-10,177	-41,608	-20,893
Que.....	459,211	736,058	474,516	457,220	723,799	572,697	-1,991	-12,259	+98,181
Ont.....	278,488	505,034	431,913	355,972	809,887	807,391	+77,484	+304,853	+375,478
Man.....	78,083	107,510	73,651	29,605	46,797	73,499	-48,478	-60,713	-152
Sask.....	131,752	135,106	85,978	-25,793	-64,264	48,937	-157,545	-199,370	-37,041
Alta.....	106,405	150,303	119,307	64,564	143,332	183,615	-41,841	-6,971	+64,308
B.C.....	41,100	116,527	98,006	123,598	347,349	233,254	+82,498	+230,822	+135,248
Canada¹.....	1,221,787	1,972,394	1,471,766	1,129,869	2,141,358	2,071,362	-91,918	+168,964	+599,596

¹ Includes the Yukon and Northwest Territories.

Subsection 2.—Age and Sex Estimates

Table 21 gives estimates of the population of Canada and the provinces by age group and sex as of June 1, 1959. The method followed in preparing these estimates was much the same as that used in calculating the population estimates, described on p. 196. These estimates are subject to revision following the 1961 Census.

21.—Estimated Population classified by Age Group and Sex, by Province,
as at June 1, 1959

Province or Territory	0-4 Years		5-9 Years		10-14 Years		15-19 Years	
	Males	Females	Males	Females	Males	Females	Males	Females
	'000	'000	'000	'000	'000	'000	'000	'000
Newfoundland.....	36.1	35.1	31.2	30.7	26.6	26.1	20.2	20.4
Prince Edward Island.....	6.4	6.1	6.4	6.2	5.7	5.3	4.4	4.4
Nova Scotia.....	46.4	43.6	42.6	40.6	37.8	36.2	30.8	29.3
New Brunswick.....	40.5	38.4	38.1	36.9	33.7	32.2	26.6	26.2
Quebec.....	332.6	319.0	300.6	291.1	266.3	255.8	211.8	207.8
Ontario.....	363.6	347.3	322.0	309.7	265.2	252.4	205.4	195.6
Manitoba.....	53.4	51.2	49.4	47.7	42.4	39.9	33.7	32.4
Saskatchewan.....	58.1	55.2	52.9	50.6	45.0	42.7	36.3	35.1
Alberta.....	87.5	82.8	74.0	70.2	59.6	56.4	46.3	44.5
British Columbia.....	91.8	88.8	81.7	78.9	68.2	65.1	53.0	50.2
Yukon Territory.....	1.1	1.0	0.8	0.9	0.5	0.5	0.4	0.3
Northwest Territories.....	1.7	1.7	1.4	1.4	1.0	1.0	0.9	0.8
Canada.....	1,119.2	1,070.2	1,001.1	964.9	852.0	813.6	669.8	647.0
	20-24 Years		25-34 Years		35-44 Years		45-54 Years	
	Males	Females	Males	Females	Males	Females	Males	Females
	'000	'000	'000	'000	'000	'000	'000	'000
Newfoundland.....	16.7	15.3	29.9	24.8	26.9	23.1	20.1	16.5
Prince Edward Island.....	3.3	3.4	5.3	5.3	5.7	5.7	5.1	4.7
Nova Scotia.....	26.1	23.8	45.2	43.1	44.0	44.5	37.6	33.8
New Brunswick.....	20.2	20.8	34.7	35.6	34.0	34.1	28.1	26.2
Quebec.....	184.5	187.1	364.3	367.7	313.4	320.5	241.7	237.2
Ontario.....	198.8	194.0	453.3	438.3	414.2	411.6	328.1	311.5
Manitoba.....	29.9	29.1	59.2	58.3	57.3	58.8	48.0	46.4
Saskatchewan.....	29.0	28.6	58.1	55.5	57.2	56.5	49.0	43.9
Alberta.....	44.0	42.2	94.4	88.2	82.6	79.5	64.2	56.7
British Columbia.....	52.2	46.7	117.5	105.5	109.2	110.0	90.3	82.1
Yukon Territory.....	0.5	0.4	1.5	1.0	1.1	0.8	0.8	0.4
Northwest Territories.....	1.0	0.7	2.4	1.3	1.6	1.0	1.1	0.5
Canada.....	606.2	592.1	1,265.8	1,224.6	1,147.2	1,146.1	914.1	859.9
	55-64 Years		65-69 Years		70 + Years		All Ages	
	Males	Females	Males	Females	Males	Females	Males	Females
	'000	'000	'000	'000	'000	'000	'000	'000
Newfoundland.....	12.4	11.6	4.5	4.3	8.2	8.3	232.8	216.2
Prince Edward Island.....	4.2	3.8	1.7	1.7	3.4	3.8	51.6	50.4
Nova Scotia.....	25.1	24.7	10.0	10.2	19.3	21.3	364.9	351.1
New Brunswick.....	19.4	19.0	7.7	7.7	14.5	15.4	297.5	292.5
Quebec.....	156.4	158.1	53.0	55.4	82.6	92.1	2,507.2	2,491.8
Ontario.....	228.8	232.7	81.7	89.7	138.4	169.7	2,999.5	2,952.5
Manitoba.....	35.0	32.9	14.6	13.5	26.8	25.1	449.7	435.3
Saskatchewan.....	35.6	31.2	15.8	12.4	30.1	23.2	467.1	434.9
Alberta.....	44.9	37.4	17.5	14.1	30.8	25.2	645.8	597.2
British Columbia.....	61.3	57.8	26.7	25.3	56.3	51.4	808.2	761.8
Yukon Territory.....	0.3	0.2	0.1	0.1	0.2	0.1	7.3	5.7
Northwest Territories.....	0.6	0.3	0.1	0.1	0.2	0.2	12.0	9.0
Canada.....	624.0	609.7	233.4	234.5	410.8	435.8	8,843.6	8,598.4

Subsection 3.—Dwelling and Family Estimates

Annually since 1953 a sample survey on dwellings and household facilities and equipment has been conducted in conjunction with the monthly labour force survey. More than 35,000 households chosen by random sampling methods in about 135 different areas are interviewed. Results of the 1959 survey are presented in Table 22.

22.—Dwelling Characteristics, Sample Survey, May 1959

Characteristic	No.	P.C. of Total	Characteristic	No.	P.C. of Total
Occupied Dwellings ¹.....'000	4,303	100.0	Dwellings with—concluded		
Single detached....."	2,894	67.2	Furnace heating.....'000	2,735	63.6
Apartments, flats....."	1,131	26.3	Running water....."	3,739	86.9
Single attached....."	278	6.5	Flush toilet ²"	3,424	79.6
Owned....."	2,913	67.7	Bath or shower ²"	3,178	73.9
Rented....."	1,390	32.3	Electric or gas range....."	3,213	74.7
Rooms per dwelling.....No.	5.3	...	Electric or gas refrigeration....."	3,833	89.1
Persons per dwelling....."	3.9	...	Electric washing machine....."	3,688	85.7
Dwellings with—			Electric vacuum cleaner....."	2,726	63.4
Electric lighting.....'000	4,164	96.8	Telephone....."	3,478	80.8
			Radio....."	4,134	96.1
			Television set....."	3,206	74.5
			Passenger automobile....."	2,802	65.1

¹ Excludes households in the Yukon and Northwest Territories; households of Indians on reserves; such collective-type households as those living in hotels, large lodging houses, institutions, clubs and camps. ² For exclusive use of household.

Estimates of the number of families in Canada and the provinces are also prepared annually. The estimates for 1958 were based on family data secured from the May 1958 sample survey of the labour force and population estimates for 1958.

The estimated number of families in Canada in June 1958 was 3,953,000, an increase of 247,000 or 6.7 p.c. since the 1956 Census. The average number of persons per family showed no change from the 3.8 reported by the 1956 Census and only a slight increase from the 3.7 reported by the 1951 Census. The number of children in families increased by 643,000 in the years between June 1956 and June 1958 and showed an average annual increase of 237,000 since June 1951. It is interesting to note that since 1951 there has been an increase in the percentage of families having three children or more at home and a decrease in the percentage of families having fewer than three children, or no children.

23.—Estimates of Family Characteristics, June 1958 compared with Censuses of 1951 and 1956

(Exclusive of the Yukon and Northwest Territories)

Characteristic	Census 1951	Census 1956	Estimate 1958	Increase 1951-56	Increase 1956-58
Population.....No.	13,984,329	16,049,288	17,015,000	2,064,959	965,712
Families....."	3,282,445	3,705,607	3,953,000	423,162	247,393
Persons per family....."	3.7	3.8	3.8	0.1	—
Children in families....."	5,534,372	6,549,733	7,193,000	1,015,361	643,267
Families with—					
No children at home.....p.c.	32.3	31.3	30.0	...	...
1-2 children....."	43.3	..	41.6	...	...
3-4 children....."	16.7	..	20.0	...	...
5 or more children....."	7.7	..	8.4	...	...

Subsection 4.—Marital Status Estimates

The estimated total population of Canada, excluding the Yukon and Northwest Territories, on June 1, 1958 was 17,015,000, of whom 11,365,700 or 66.8 p.c. were 15 years of age or over. The estimated total of males 15 years of age or over was 5,743,800, of whom 1,765,200 or 30.7 p.c. were single, 3,767,600 or 65.6 p.c. were married and 211,000 or 3.7 p.c. were widowed or divorced. The estimated total of females 15 years of age or over was 5,621,900, of whom 1,308,300 or 23.3 p.c. were single, 3,741,100 or 66.5 p.c. were married and 572,500 or 10.2 p.c. were widowed or divorced.

The trend towards earlier age at marriage during the war and postwar period was reflected in the sharp rise in the proportion married in the age group 15-24 years, where the percentage increased from 8.0 in 1941 to 15.6 in 1958 for males and from 21.5 in 1941 to 33.8 in 1958 for females.

Estimates of marital status also reflect the continuing excess of married males over married females, and the large number of widows as compared with widowers in the population, previously noted as a striking feature in the results of the 1956 Census. It is estimated that in 1958 the number of widows exceeded the number of widowers by 355,000.

24.—Estimated Population classified by Marital Status, Age Group and Sex, as at June 1, 1958

(Exclusive of the Yukon and Northwest Territories)

Age Group and Sex	Single				Married		Widowed or Divorced		Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.
0 — 14 years.....M.	2,883,100	—	—	—	—	—	—	—	2,883,100
F.	2,766,200	—	—	—	—	—	—	—	2,766,200
T.	5,649,300	—	—	—	—	—	—	—	5,649,300
15 — 24 ".....M.	1,046,200	193,100	400	1,239,700	—	—	—	—	1,239,700
F.	799,200	407,900	700	1,207,800	—	—	—	—	1,207,800
T.	1,845,400	601,000	1,100	2,447,500	—	—	—	—	2,447,500
25 — 34 ".....M.	331,200	921,300	2,600	1,255,100	—	—	—	—	1,255,100
F.	183,200	1,030,300	8,700	1,222,200	—	—	—	—	1,222,200
T.	519,400	1,951,600	11,300	2,482,300	—	—	—	—	2,482,300
35 — 44 ".....M.	142,900	970,000	11,200	1,124,100	—	—	—	—	1,124,100
F.	110,000	972,300	34,600	1,116,900	—	—	—	—	1,116,900
T.	252,900	1,942,300	45,800	2,241,000	—	—	—	—	2,241,000
45 — 54 ".....M.	102,800	761,700	20,300	884,800	—	—	—	—	884,800
F.	87,500	667,700	73,000	828,200	—	—	—	—	828,200
T.	190,300	1,429,400	93,300	1,713,000	—	—	—	—	1,713,000
55 — 64 ".....M.	71,400	499,500	35,600	606,500	—	—	—	—	606,500
F.	59,400	392,300	139,200	590,900	—	—	—	—	590,900
T.	130,800	891,800	174,800	1,197,400	—	—	—	—	1,197,400
65 years or over.....M.	70,700	422,000	140,900	633,600	—	—	—	—	633,600
F.	64,000	270,600	316,300	650,900	—	—	—	—	650,900
T.	134,700	692,600	457,200	1,284,500	—	—	—	—	1,284,500
All Ages.....M.	4,648,300	3,767,600	211,000	8,626,900	—	—	—	—	8,626,900
F.	4,074,500	3,741,100	572,500	8,388,100	—	—	—	—	8,388,100
T.	8,722,800	7,508,700	783,500	17,015,000	—	—	—	—	17,015,000

Section 3.—The Native Peoples of Canada

Two small segments of the population are given special attention because they, in point of time and origin, are the most truly Canadian of the country's citizens and because they, of all the people in the land, are the least able to cope with the changing way of life now being forced upon them.

The Indians.*—The Indians of Canada, the fastest-growing ethnic group in the country, live on 2,226 tracts of land that have been reserved for their use and in several outside communities. There are nearly 600 Indian "bands" scattered from Prince Edward Island in the east to the Queen Charlotte Islands in the west, from southern Ontario north to Aklavik. It is believed that when the white man arrived there were 200,000 Indians roaming in what is now Canada. Half a century ago they had dwindled to fewer than 90,000 and were considered to be a dying race, but by the end of 1959 their number was roughly 180,000 and they are now increasing at the rate of 3 p.c. a year, compared with an over-all Canadian average natural growth of 2 p.c. Since health services have drastically reduced infant mortality and prolonged life in middle age, it is estimated that by 1968 the Indian population will have reached 228,000 of whom only 35 to 40 p.c. will be living on reserves.

A census of Indian population is taken at five-year intervals. The numbers recorded at the censuses of 1949 and 1954 together with an estimate as at the end of 1958 are given in Table 25.

25.—Indian Population, by Province, Departmental Censuses 1949 and 1954, and Estimate as at Dec. 31, 1958

Province	1949	1954	1958	Province or Territory	1949	1954	1958
	No.	No.	No.		No.	No.	No.
Prince Edward Island.....	273	272	331	Saskatchewan.....	16,308	18,750	22,438
Nova Scotia.....	2,641	3,002	3,435	Alberta.....	13,805	15,715	18,632
New Brunswick.....	2,139	2,629	3,083	British Columbia.....	27,936	31,086	35,289
Quebec.....	15,970	17,574	20,127	Yukon Territory.....	1,443	1,568	1,806
Ontario.....	34,571	37,255	41,803	Northwest Territories.....	3,772	4,023	4,399
Manitoba.....	17,549	19,684	22,859				
				Canada.....	136,407	151,558	174,242

26.—Indian Land in Reserves and Number of Bands, by Province, Year Ended Mar. 31, 1958

Province	Reserves		Bands	Province or Territory	Reserves		Bands
	No.	Area			No.	Area	
		acres	No.			acres	No.
Prince Edward Island.....	4	2,741	1	Alberta.....	90	1,543,867	41
Nova Scotia.....	40	19,492	11	British Columbia.....	1,629	820,915	204
New Brunswick.....	23	37,594	15	Yukon Territory.....	15	3,535	15
Quebec.....	24	178,686	41	Northwest Territories.....	10	1,924	15
Ontario.....	164	1,558,393	111				
Manitoba.....	107	524,358	50				
Saskatchewan.....	120	1,205,672	67	Canada.....	2,226	5,897,177	571

In proportion to their numbers, the Indians of today form one of the most varied populations on earth. In the southern parts of Canada many follow the essentially rural-type economy of their non-Indian neighbours. Some work in factories, in offices, or at individual trades and some are lawyers, doctors, nurses, teachers or businessmen. However, at the other end of the economic scale, the Indian who, in the course of history, has been isolated and is at present living on essentially unproductive areas, generally follows a modified, food-gathering type of existence not too different from that of his ancestors. He fishes, hunts and traps. He lives in his log cabin. Often he sets up his tent in summer. True, he wears factory-made clothes, eats dehydrated and canned food from the store,

* Prepared in the Editorial and Information Division, Department of Citizenship and Immigration, Ottawa.

propels his canoe with an outboard motor and often flies by bush 'plane to his trapline. Nevertheless, this is just the veneer of the white man's civilization. Underneath, his culture is vastly different and all-too-often misunderstood. Living on a variety of levels between that of the Indians of the cities and that of the Indians of the woods are many Indian bands, each with its own set of problems.

Faced with the inexorable pressures of increasing population and marginal resources, the Indian Affairs Branch of the Department of Citizenship and Immigration, which is responsible for the administration of all matters affecting the welfare of Indians, has set two essential objectives for the next decade—a greater measure of self-responsibility for people on the reserves, and more help for those who wish to make their livelihood in non-Indian society. Neither objective can be attained through force. The pace of developments must be determined by the Indians themselves, rather than superimposed by others or processed in accordance with a time-table based on administrative convenience.

It is the young people who will decide in which direction the future of the Indian race lies. At present they are caught between two worlds, one representing the old Indian culture with its own thought-patterns and attitudes and the other the fast-paced, technological society of the mid-twentieth century. In the face of this conflict, the older people, set in their ways, have tended to withdraw and the young people are often confused.

The Indian has different social values which conflict with the culture of the non-Indian world outside the security of the reserve. Contrary to people in a Western nine-to-five-o'clock society seeking security and credit, the Indian thinks of time, savings and the future in quite different terms. This is especially so where his contacts with the white man have been superficial but less so in areas where intermingling of Indian and non-Indian groups is commonplace.

The Indian Affairs Branch reaches into the lives of Indians most deeply by its educational policy. This is, briefly, to give every child the best schooling he can absorb and in accordance with his needs to provide tuition, board and personal expenses while he is attending a non-Indian high school, a teachers' college, a nursing or vocational course or a university.

Four types of schooling are provided: elementary day schools on the reserves, residential schools, hospital schools and seasonal schools for children whose families are still partially nomadic, especially while winter trapping. Residential schools are primarily for children from broken homes or whose parents are unable to give them proper care and direction and for the children of nomadic peoples whose way of life makes day school attendance impracticable. Other residential pupils live in settled communities where scattered home locations or substandard socio-economic patterns also prevent successful day school attendance.

During the past decade there has been a definite movement towards the integration of Indians in non-Indian provincial and private schools, a policy strongly advocated by the Indian Affairs Branch. During the 1958-59 school year, 21 p.c. of the Indian children at school were receiving their education with non-Indians as compared with only 6 p.c. ten years previously. This policy has been welcomed by the majority of Indians and non-Indians, though some groups have expressed certain reservations, not about integration as such but about the pace set by the Branch. They claim that many Indians are not ready for integrated education and suggest a slower policy.

Integrated education is accomplished by two methods. Where it is possible for Indian children to attend local non-Indian schools, the Indian Affairs Branch, with the consent of the parents, asks the school board to accept them and pays tuition costs. Where there is not enough space or where large numbers of Indian pupils are involved, the Branch signs an agreement for a joint school and pays a share of the cost of additional classrooms. In British Columbia, one out of every three Indians goes to a non-Indian school; in Nova Scotia, one in four; in Quebec and Ontario, one in four and a half. Integration has progressed least on the prairies.

Indian students, no matter what school they attend, face more problems than most Canadians. Because many do not speak English fluently when they first go to school they usually take longer to cover grade one. By Canadian standards they are generally older by the time they pass grade eight, not because they are less intelligent or through any inherent disabilities, but because of language and cultural difficulties. Their habits of communication, their processes of reasoning, their attitudes towards competition, their learning and living experiences in a rural, food-gathering, reserve-type economy are basically quite different from those of other Canadian children. Nevertheless, an increasing number of Indian children are entering high school—over 2,200 in the academic year 1958-59 compared with only 600 ten years previously. Vocational enrolment has increased in the same period from 41 to 412, and university enrolment from nine to 40.

27.—Enrolment of Indian Pupils classified by Type of School and by Grade, Academic Year 1958-59

Classification	Grade				Technical	Profes- sional	Total
	Kinder- garten	1-6	7-8	9-13			
	No.	No.	No.	No.	No.	No.	No.
Day school.....	1,626	14,781	1,619	50	—	—	18,076 ¹
Residential school boarders attending classes at residential schools.....	530	7,518	1,044	599	—	—	9,691
Day pupils attending classes at resi- dential schools.....	120	1,161	125	12	—	—	1,418
Seasonal school.....	183	710	—	—	—	—	893
Hospital school.....	57	472	35	8	—	—	572
Provincial, private or territorial school.....	—	5,188	1,054	1,475	349	120	8,186 ²
Totals.....	2,516	29,830	3,877	2,144	349	120	38,836³

¹ Includes 283 residential school boarders attending Indian day schools.

² Includes 737 residential school

boarders attending provincial or private schools.

³ Excludes 1,168 non-Indians attending Indian day schools.

28.—Indian Pupils Attending Provincial, Private or Territorial Schools, classified by Grade or Type of Training and by Province, Academic Year 1958-59

Grade or Type of Training	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	N.W.T.	Yukon	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Grade—												
1.....	—	40	3	46	236	96	140	51	409	412	36	1,469
2.....	—	26	3	35	134	44	81	74	246	161	10	814
3.....	1	19	3	45	142	36	58	62	234	114	15	729
4.....	1	18	11	56	154	51	17	56	305	102	12	783
5.....	—	14	11	92	153	32	39	59	245	74	10	729
6.....	—	8	16	69	131	27	28	57	221	94	13	664
7.....	—	19	9	42	79	19	21	60	301	19	14	583
8.....	—	14	3	54	103	24	19	47	191	11	5	471
9.....	—	32	18	41	210	26	43	67	236	5	13	691
10.....	1	17	10	19	132	19	34	43	143	9	13	440
11.....	—	10	3	18	69	11	20	18	50	2	5	206
12.....	1	3	1	3	52	1	4	18	36	—	1	120
13.....	—	—	—	1	12	—	—	—	5	—	—	18
University—												
1st year.....	1	—	—	5	2	1	—	—	2	—	—	11
2nd year.....	—	—	1	3	2	—	1	—	1	—	—	8
3rd year.....	—	1	—	—	2	1	1	—	—	—	—	5
4th year.....	—	—	—	1	—	—	—	—	—	—	—	1
Medical.....	—	—	—	11	7	1	8	—	4	2	—	33
Teacher training.....	—	2	—	3	4	3	6	—	4	—	—	23
Nurse training.....	—	8	—	26	28	5	9	8	9	—	2	98
Commercial.....	1	6	—	41	23	7	9	6	16	74	1	183
Trades.....	—	—	—	—	6	2	10	6	7	2	1	38
Nurses' aide.....	—	—	4	—	4	4	—	1	4	—	—	16
Blind and deaf.....	—	—	1	2	—	—	—	—	—	—	—	—
Other.....	—	1	—	—	29	5	2	11	4	—	—	52
Totals.....	6	238	99	614	1,714	415	550	644	2,673	1,081	152	8,186

At the end of formal schooling, the Indian must make a crucial decision—to return to or stay on the reserve, or to earn a living in a wider Canadian society. Integrated schooling helps him to accept the latter choice more readily. A placement service, with officers at Vancouver, Edmonton, Saskatoon, Winnipeg, North Bay, Toronto, Quebec City and Amherst, was set up by the Indian Affairs Branch in 1957 to assist these young people. Jobs are found for selected young students who want to work in the larger cities and they are counselled and guided as they cross the bridge into non-Indian society.

Apart from these younger people, a great many Indians both live and work off the reserves, or live on the reserve and work outside. The Mohawks of Eastern Canada have made a name for themselves as high-steel workers. British Columbia Indians are known as reliable and hard-working longshoremen, and have long been successful salmon and herring fishermen. Naskapis from northern Quebec are part of the working force at the iron mines at Schefferville. The Dokis Band near North Bay live on rich timberlands and are loggers and pulp cutters. Walpole Island men in southern Ontario are skilled workers in a boat-building factory at Algonac, Michigan. These are random examples which indicate that, given the education, training and the opportunity, the Indian can compete on equal terms with others in industrial society. Prejudice on the part of employers is lessening and those who employ Indians do not consider them to be different from other workers after they have adjusted to regular working hours.

In the more isolated areas of the northern Laurentian Shield and the Mackenzie District, the Indians depend largely on trapping, domestic fishing and hunting for a living. As expert outdoorsmen and conservationists, they have helped, for example, to restore the once-depleted beaver population from Quebec to Saskatchewan and put it on a sustained-yield basis. In some areas of the North, the Indians have been assisted in launching commercial fishing programs. Here the main problem is transportation, and private operators and the provincial and federal governments have been assisting them by flying their catches to railhead for shipment to the consuming markets in both Canada and the United States.

Superimposed on these various strata of employment are traditional methods used seasonally by the Canadian Indian to supplement his income: potato-picking in Maine, berry-picking in the States of Washington and Oregon, wild-rice gathering in southern Manitoba, northwestern and central Ontario, frog-picking, seneca-root gathering, basket weaving and other traditional Indian crafts.

No matter where he works or what his employment, the Indian must face the problem of adjustment and make his own choice. If he wants to participate in the non-Indian world he may still keep his sense of identity, for integration is the policy, not assimilation, and he may remain a member of his band. On the other hand, if he wishes to continue living on his reserve, the Indian Affairs Branch will provide him with community and housing assistance, financial help through revolving loan funds in farming and fishing and business, relief grants where necessary and assistance in developing leadership.

Much of the leadership among the Indians today stems from the band councils. Each band chooses its own representatives. A few still do so by the old tribal systems—usually electing for life—but the majority have adopted the elective system, with the chief and councillors holding office for two years. All councils may make by-laws. They may, for example, regulate traffic, prevent trespass of cattle, construct water courses, roads, bridges, etc., and protect fur-bearing animals, fish and game.

Twenty-seven bands have reached the stage where they may make money by-law to raise funds through taxation of property owned by Indians on a reserve. Generally, these bands are fairly progressive and are rapidly learning administrative procedures. However, a band must apply for permission to pass money by-laws and, for various reasons of their own, there are several bands in Canada who prefer not to accept this responsibility. Band councils also make decisions on the use of their own money, capital—usually procured from the sale of land in the past—which is held in trust by the Federal Government. Capital expenditures are for long-term improvements on reserves.



DISTRIBUTION OF
INDIAN AND ESKIMO POPULATIONS



Up to Jan. 1, 1960, three bands had asked for, and been granted, the right to spend their own revenue funds, which accrue usually from interest on trust funds held by the Government. Each band draws up an annual budget, submits it to the Minister of Citizenship and Immigration for general approval, and then handles its own funds through its own treasurer in a manner similar to that of any rural municipality. Tyendinaga near Belleville in Ontario was the first band to apply for this right. Two other Ontario bands, Walpole Island near Wallaceburg and Moravian near Chatham, quickly followed suit.

These are signs of a desire among the Indians to take over more responsibility for their own affairs and although the process may be long and sometimes painful it is the policy of the Government to give them every encouragement. To equalize their status with other Canadian citizens, a Bill was passed by the Federal Parliament on Mar. 31, 1960* extending to all Indians the right to vote at federal elections. Previously, while all adult Indians could vote for their own band councils, and those living in British Columbia, Manitoba, Ontario, Newfoundland, Nova Scotia and the Northwest Territories had the provincial or territorial franchise, only Indian veterans and Indian people established in non-Indian communities had the right to vote in federal elections. The granting of the federal franchise to the Indian does not in any way affect the rights and privileges to which he is entitled.

The Indian has much to offer to Canadian industry and culture. He has been falsely regarded for too long as a "ward" of the Government, when he is in fact a citizen. He has, it is true, certain rights and privileges given him because of historical circumstance but he shares, for example, in most of the social welfare benefits extended to other Canadians, such as family allowances. In 1958-59, 4,539 Indians received old age security, 1,762 old age assistance, 302 disabled persons' allowance, 287 blind persons' allowance and 310 provincially administered and financed mothers' allowance.

In co-operation with provincial authorities, private, foster-home or institutional care is provided when required for children needing care, juvenile delinquents, crippled and unemployable persons and old people. In Ontario, for example, arrangements have been made for the extension of the services of Children's Aid Societies to Indian reserves. In 1959 the "ration system" of relief formerly in use was abolished and indigent Indians were made eligible for assistance by cheque on substantially the same basis as non-Indians. The amount of relief assistance was increased and placed on a sliding scale, varying with the cost of living, thus protecting Indians in remote areas where food costs are high. These changes were designed to place more responsibility on Indian families to manage their own affairs, to remove the stigma of relief as much as possible and to maintain the morale and self-respect of persons who must receive assistance.

The health of Indians is under the care of the Indian and Northern Health Services of the Department of National Health and Welfare. The Department maintains seventeen hospitals, 41 nursing stations with four to ten beds and 108 health centres where treatment, but no bedside care, is provided. The most dramatic advances have been made in the field of child care and in the treatment of tuberculosis. In 1958 there were fewer than 3,500 Indians under treatment for tuberculosis compared with 5,900 in 1955. As each province adopts a general hospital insurance plan, the Indians have been included. The policy is to avoid distinction between the Indians and other citizens of Canada.

The Eskimos.†—Eskimos are the only native people who live in both America and Asia and there are no more than 50,000 of them in the world. In Canada the Eskimo population is about 11,500, very thinly dispersed across the sprawling top of the Continent. The main groups live along the northern coast of the Western Arctic, on Baffin Island, largest in the Arctic Archipelago, and in northern Quebec. In only four centres—Aklavik and Inuvik near the mouth of the Mackenzie River, Fort Chimo on the southern point

* Not yet proclaimed at time of going to press.

† Prepared by Mrs. Irene Baird, Information Section, Department of Northern Affairs and National Resources, Ottawa.

of Ungava Bay, and Great Whale River on the east side of Hudson Bay—do Eskimos and Indians share the same community. By tradition, treeline is the southern boundary for the Inuit while for the Indian people treeline has been a limit north of which they have not chosen to live.

Today the Canadian Eskimos and the vast forbidding land in which they live have begun to emerge as a fresh force in national development. The more than a million and a half square miles that comprise the Yukon and Northwest Territories and include all the Arctic islands extending northward from the mainland to the North Pole are being actively appraised for their resource potential. The geological structure underlying the tundra and the polar seas is being determined and recorded. The government is building roads over muskeg and permafrost, wrestling—slowly and at great cost—the ground transportation problem, which is the toughest and most basic of all the problems of northern development. The oil industry, already with a substantial investment in the sub-Arctic, is vitally interested in increasing that investment by searching the Arctic regions for new sources. Over 180,000,000 acres in the sedimentary basins of the Yukon and Northwest Territories are now under oil and gas exploration permit. Appraising the resources of the North and developing and marketing those resources will take longer and most certainly will cost more than such developments elsewhere in Canada, but for a region that has for so long lain unknown and untouched, the changes of the past few years are rapid indeed, and basically responsible for those changes is the present-day efficiency and versatility of air transport.

Few areas of the country, even in the barren wastes of the North, are now inaccessible. Although thousands of square miles are still considered remote, the main centres are only flying time away from the great commercial cities of the south; Frobisher Bay, for example, is a mere day's flight from Montreal, and Aklavik about nine hours from Edmonton. Multi-engined aircraft are flying the polar routes to and from Europe. The meteorological and communication stations that dot the North, the survey crews and the small settlements are served by aircraft so that landing strips are Main Street to much of the Arctic and movement by air more familiar to the inhabitants than any other form of transport.

These happenings in the North are some of the reasons why life for the Inuit is changing and some of the reasons why new opportunities for employment are opening up for them and why they must be trained to take advantage of them. Change has not come to the Eskimos in all areas at the same pace. Social change seldom works that way but comes in a series of segments, large and small, which, when merged together, resolve into new patterns. But regardless of speed, no aspect of development north of treeline has aroused keener public interest than the position of the Eskimo people. Their fellow Canadians, though sometimes divided as to how the Inuit should be equipped to adapt to change, are united in wanting them to have all the help they need. Inuk, as a man, is known to relatively few persons outside the Arctic, but he belongs to a race that is exceptionally well regarded.

The Canadian Government, through the Department of Northern Affairs and National Resources, the agency having over-all responsibility in the North, and the Indian and Northern Health Services of the Department of National Health and Welfare, has initiated vigorous programs to bring education and medical care to every northern resident who can be reached. The Royal Canadian Mounted Police also carries out field duties for both departments. The Arctic has always tested to the limit the resourcefulness and courage of those who live and work there and it makes no exceptions of race. To keep contact—over some 900,000 sq. miles—with an Eskimo population that still often chooses to live the life of the hunting camps, calls for the co-operation of all who share the high latitudes with them—northern service officers, teachers, doctors, nurses, missionaries, traders, radio operators and weather men.

Radio and air patrols maintain administrative contact. The first of an experimental system of emergency units has been set up in the Keewatin District. Insulated, radio-equipped, and stocked with food and medical supplies, these units will be established

close to the larger hunting camps with one or more of the local Eskimos trained to operate them. Then if some emergency strikes the camp, the Eskimos have the means to communicate their plight and food and medical supplies to carry on with.

Eskimos following their traditional way of life are being given new ideas to strengthen their security without interfering with their self-reliance. Conservation is still an abstract conception to a people accustomed to taking game while it is there and, when it is no longer there, moving off in search of it. But a community of hunting Eskimos on the west shore of Hudson Bay has found that conservation makes good sense and that the practice of it can increase the yield of the land and can keep them in food when supplies are scarce. The Keewatin Re-establishment Project was set up to help the Eskimo families help themselves. Working with the guidance of an experienced field officer and the results of biological and wildlife research, they have learned a practical aid to making a better living. The principle of providing for tomorrow does not come naturally to traditional hunters like the Eskimos and Indians but both are intelligent enough to grasp that it can be turned to profitable account.

The advantages of the co-operative have also been introduced recently in the Arctic. The idea of pooling labour and sharing the harvest is traditional with the Inuit and they have recognized that a method of producing, processing and marketing which has been profitable for other Canadians could serve them too, particularly in areas where the fishermen, when working singly, were on relief. With some help from government officers the first two co-operatives were organized—the George River Eskimo Fishermen's Co-operative on Ungava Bay and a co-operative at Port Burwell. In the Frobisher Bay area, too, Eskimo fishermen have taken the first steps toward forming a co-operative.

At George River in 1959 co-operative harvesting produced some 18,600 lb. of Arctic char, and at Frobisher Bay about 15,000 lb. Char is in great demand as a gourmet fish in the "south" and the 1959 catch brought a net return of about 83 cents a pound to the Eskimos. The Port Burwell co-operative will be producing in 1960. In this region also, char is plentiful and of fine quality and cod is a useful source of food to the local Eskimos. The George River people—about 25 families—live on the edge of treeline and have plans to start a sawmill operation. They have used local logs to build a community hall and plans for a school are being drawn up. Eventually they hope to put up permanent homes.

In marketing the first season's catch, the co-operative fishermen faced one obstacle that ingenuity alone could not solve. Produce does not reach markets unaided; above all it must be kept fresh. This problem was resolved by the purchase of a 15-ton freezer through the Eskimo Loan Fund, a Fund started in 1957 by the Department of Northern Affairs. Fittingly enough, the first loans from the Fund were made to a group of Eskimo settlers who, in the tradition of earlier Canadian pioneers, set out to make their homes in unknown and almost empty country. A small group from Port Harrison, where game was scarce, volunteered to be moved to the High Arctic where it was more abundant and, with loan funds, were helped to re-establish themselves. Eskimos use the Fund to buy whalers and fishing boats, hunting and other equipment that will contribute towards better living. Experience has shown that they are excellent risks and the labour involved in such operations contributes to the development of the country.

For the Eskimos who have chosen to enter wage employment now becoming available to those who are prepared for it, training is provided—sometimes on the job, as was the case during the construction stages of Inuvik, sometimes in northern schools, and sometimes outside the North. Vocational or trades training is regarded as so vital to the earning-power of all who live in the Northwest Territories that it is built right into the government's school curriculum. All northerners now attend the same schools—schools that range from the Sir John Franklin School at Yellowknife, which offers a wide range of vocational courses and where students may qualify for university entrance, to single classroom units in remote Eskimo communities.

Teaching in the Arctic can be rigorous—though in some parts of the North it is hardly more so than in rural schools in the northern half of the provinces. But whatever its demands there is never any lack of applicants—although choosing the right ones must be done with discrimination. With so many teachers willing to accept the challenge of an Arctic posting, qualifications can afford to be the highest in Canada, and they are.

There are close to 50 schools in the Northwest Territories and among those opened in 1960 are two interesting new ventures for the North. A new school at Fort Simpson will include the first classroom for the study of agricultural science, and quarters in the old school building will accommodate hard-of-hearing and sight-saving classes. The 1959 vocational training program included many trade skills for students of all ages. One Eskimo girl took on-the-job-training as an air hostess from a northern airline and now flies between Montreal and Frobisher Bay. Another Eskimo air hostess who trained as a nurses' aide some years ago flies between Winnipeg and Churchill. Interesting too is the fact that the first oil-drilling crew working north of the Arctic Circle included three Eskimos who had been trained in Calgary as oil-workers.

Trainees who go "south" on courses are chosen with care and competition is keen for the privilege. The last group of Eskimos to go outside the Arctic in 1959 went to the Royal Canadian Electrical and Mechanical Engineers School at Barriefield in southern Ontario to take a four-month course in power-plant operation, a skill in great demand in northern communities. Most of these trainees were school caretakers learning to handle school heating and lighting plants. Others were taking more advanced training.

Eskimos can suffer by having other Canadians expect too much of them, or expect it too quickly. But it is difficult to withhold admiration from a race with the innate resourcefulness to adapt as quickly as they do to callings so radically different from their traditional way of life. The first group to tackle hard-rock mining, for example, performed with profit to themselves and to the North Rankin Nickel Mining Company which employed them, and brought credit to their race.

Neither is it difficult to think highly of a race whose talent with a knife and a lump of stone has been acclaimed so widely, yet who, themselves, have always regarded the gift as something fortuitous—a hobby, a creative pleasure to be enjoyed in one's spare time. Not all Eskimo carving is distinguished; some of it is not even good. But enough of it is both to have had an extraordinary impact. Eskimo art has come out of its environment free of any influence save the day-to-day struggle for life of a people, and has stepped into the front rank of the world's primitive art, becoming, as it should, an important source of revenue for its creators. And for many Eskimos who, through illness or other causes, are not able to hunt or perform heavy labour, it has offered a new avenue of productiveness. At the Eskimo Rehabilitation Centre at Frobisher Bay, Eskimo carvers may offer their work for sale, receive guidance if they ask for it, and obtain a supply of stone since none is available locally. The Eskimo art shop at the Frobisher airport is a thriving business.

No one can put creativeness in a man if none is there, but if he has a spark of talent he can be helped to gain confidence and extend his range. This is what is going on at the Eskimo Craft Centre at Cape Dorset, Baffin Island. Working with a gifted instructor, Eskimos have already produced one art form—stone block and seal-skin pictures—that may eventually compete in popularity with the stone carvings. A seal-skin print was selected for presentation to Queen Elizabeth when she visited Canada in the summer of 1959. The artists use paints made from pigments mixed with seal oil and brushes of polar bear hair. Designs are cut out of the skin and transferred to paper by hand-colouring. One stencil can make as many as thirty prints.

For the past five years Northern Affairs exhibits—in addition to exhibitions of carvings—have introduced to the "south" everything from parkas and mukluks to walrus harpoons. Eskimos are not mass-producers and some time will elapse before enough Arctic handicrafts are available for wide sale. But the popularity of the Eskimo-produced goods that have been brought out of the North for sale in Canadian and American cities shows definitely that the market is there.

As has been said many times, the North has a way of stimulating resourcefulness and ingenuity. At Aklavik in the Western Arctic, a trapping centre cruelly slashed by falling fur prices and synthetics, a pilot training project was undertaken in 1959. Its aim was to combine two valuable local resources—fur and the native skill of Eskimo women at tailoring fur garments. With the help of the Vocational Education Supervisor for the Northwest Territories a small group of Eskimo women were introduced to "southern" methods of fur-working. Before long they had begun to meet the local demand for fur parkas and headgear, seal-skin mukluks and muskrat mittens, with a professional touch. This is a modest fur factory as factories go but it has at least one asset that all strive for—a healthy backlog of orders. At the close of the year some \$10,000 in orders stood on the books, enough to keep the Eskimo seamstresses busy all winter and their families off relief.

Like all pilot projects this one has an eye on bigger things. As the number of trainees grows and the value of their output increases, this could become an Eskimo fur co-operative. Or it might be used in conjunction with the Inuvik Rehabilitation Centre to train the physically handicapped to a new productiveness, like the Centre at Frobisher Bay. Community needs will probably be the decisive factor.

By tradition, Eskimos are a people who prefer to "write by tongue"—story-tellers who have handed down their past, partly from choice and partly from necessity, in the form of speech. But the printed word has come to them at last. Early in 1959 the first all-Eskimo magazine, *Inuktituk* (The Eskimo Way of Life) made its appearance in two editions—syllabics for the Eastern Arctic—Roman script for the Western.

Outside the Arctic the voice of the Inuit in Canada has been silent in the conduct of Eskimo affairs but in May 1959, when the Eskimo Affairs Committee met in Ottawa, the long silence was broken. A race accustomed to listening to other people speak for it was in the nation's Capital to speak for itself. The Committee is an advisory body, reporting to its Chairman, the Commissioner of the Northwest Territories. It is not large as working committees go, and has been meeting only in recent years. But the presence of Eskimo representatives from Western, Central and Eastern Arctic who bluntly, and with dignity, voiced the views of the Eskimo community, gave the 1959 meeting an impact as fresh and sharp as wind off the barrens.

This was the first time in Canada that the Inuit have sat around a conference table with senior officials of government, religion and industry and examined with them the changes taking place in the Arctic way of life and the role of the Eskimo people in that change. It was a modest, almost tentative step in a new direction, yet the beginning of a partnership that will become more and more an accepted part of the administration of Eskimo affairs. For years, in various capacities, Eskimos have worked for all three types of agency represented on the Eskimo Affairs Committee and their advice on local problems has often been sought, but never in the past has there been such formal recognition of what Eskimo experience can contribute to the future of the North.

The Inuit have their normal complement of human frailties but dependence on other people is not one of them. Although, like other Canadians, the Eskimo is eligible for the benefits of social security and government assistance, he is by temperament a resourceful and self-directing man. If he had not sprung from this kind of stock, Eskimo affairs would by now have been of more interest to the archivist than to the administrator.

The Government invited the Eskimos to sit at the conference table to say what was in their minds, and they did, giving voice to their desires for more education and vocational training, and for the opportunity to qualify for better jobs and assume a greater measure of responsibility in the conduct of their own affairs. If the voice of the Eskimo came through with clarity so did the voice of other Canadians. And what did the Inuit learn from this? They learned more about what other Canadians are trying to do for, and with, them; why some things are going well and others not so well. They learned that what

their fellow countrymen most wish for the future of the Eskimo is that, like themselves, he be equipped to choose the kind of life he wishes to live where, and how, he wishes to live it.

Section 4.—Statistics of World Population

World population figures given in Table 29 are from the United Nations *Population and Vital Statistics Report* for October 1959 and, except as otherwise noted, are official mid-year estimates for 1958. The area figures are from the United Nations *Statistical Yearbook, 1958*.

Estimated Population of the World by Continents.—The statement below presents adjusted estimates of the 1958 mid-year population of the world by continental divisions. These aggregates do not coincide exactly with the sum of the figures for individual countries because they include, in addition, adjustments for over- and under-enumeration, over-estimation, categories of population not regularly included in the official figures, and approximations for those countries that have not provided official 1958 data. The estimates are as follows:—

<i>Continental Division</i>	<i>Number</i>
Africa ¹	230,000,000
North America.....	256,000,000
South America.....	134,000,000
Asia ²	1,592,000,000
Europe ³	418,000,000
Oceania.....	15,800,000
WORLD TOTAL.....	2,852,000,000 ⁴
Commonwealth countries.....	683,600,000

¹ Excludes Syria, a province of the United Arab Republic.
² Excludes U.S.S.R. Includes Syria and Asiatic Turkey.

³ Excludes U.S.S.R. Includes European Turkey.

⁴ Includes an allowance for population of the U.S.S.R.

29. -Areas and Populations of the Countries or Areas of the World, 1958

NOTE.—Commonwealth countries are indicated with an asterisk (*).

Continent and Country	Area	Population
	sq. miles	'000
Africa		
Ethiopia.....	457,267	21,600
*Ghana.....	91,843	4,836
Guinea.....	94,926	2,800 ¹
Liberia.....	43,000	1,250 ¹
Libya.....	679,360	1,153
Morocco.....	171,305	10,330
Sudan.....	967,501	11,937 ²
Tunisia.....	48,332	3,852
*Union of South Africa ³	472,359	14,418
United Arab Republic.....	457,329	20,061 ⁴
Egypt.....	386,101	24,781
Syria.....	71,228	4,280
TERRITORIES AND DEPENDENCIES		
Belgium—		
Belgian Congo.....	905,381	13,559
France—		
Algeria.....	919,593	10,265
Comoro Islands.....	838	182

For footnotes, see end of table, p. 215.

29.—Areas and Populations of the Countries or Areas of the World, 1958—continued

Continent and Country	Area	Population
	sq. miles	'000
Africa—concluded		
TERRITORIES AND DEPENDENCIES—concluded		
France—concluded		
Former French Equatorial Africa—		
Central African Republic.....	241,699	1,161
Chad.....	495,368	2,600
Congo, Republic of the.....	134,749	780
Gabon.....	102,317	417
Former French West Africa—		
Dahomey.....	44,696	1,725
Ivory Coast.....	124,503	3,090
Mauritania.....	419,230	640
Niger.....	458,995	2,490
Senegal.....	76,124	2,300
Sudanese Republic.....	464,874	3,700
Voltaic Republic.....	105,839	3,736
French Somaliland.....	8,494	69
French Southern and Antarctic Territories.....	2,918	..
Malagasy Republic.....	227,800	5,184
Réunion.....	969	318
Portugal—		
Angola.....	481,352	4,508
Cape Verde Islands.....	1,557	192
Mozambique.....	302,329	6,234
Portuguese Guinea.....	13,948	559
São Tomé and Príncipe.....	372	62
Spain—		
Ifni.....	579	52
Possessions in North Africa.....	82	145
Spanish Guinea.....	10,831	214
Spanish Sahara.....	102,703	19
United Kingdom—		
*Basutoland.....	11,716	658
*Bechuanaland.....	275,000	334 ^a
*British Somaliland.....	68,000	650
*Gambia.....	4,003	292
*Kenya.....	224,960	6,351
*Mauritius, excl. dependencies.....	720	603
*Nigeria, Federation of.....	339,169	33,043
Eastern Region.....	29,484	7,927
Lagos (Federal Capital).....	27	337
Northern Region.....	264,282	18,043
Western Region.....	45,376	6,736
Rhodesia and Nyasaland, Federation of—		
*Northern Rhodesia.....	288,130	2,300
*Nyasaland.....	45,366	2,710
*Southern Rhodesia.....	150,333	2,640
*St. Helena, excl. dependencies.....	47	5
*Seychelles.....	156	42
*Sierra Leone.....	27,925	2,260
*Swaziland.....	6,704	267
*Uganda.....	93,981	5,779
*Zanzibar and Pemba.....	1,020	304
TRUST TERRITORIES		
*Cameroons (U.K. Adm.).....	34,081	1,591
Cameroons (Fr. Adm.).....	166,796	3,187
Ruanda-Urundi (Belg. Adm.).....	20,916	4,700
Somaliland (Ital. Adm.).....	178,201	1,320
*Tanganyika (U.K. Adm.).....	361,800	8,916
Togoland (Fr. Adm.).....	22,008	1,100
FORMER MANDATED TERRITORY		
(Union of South Africa)		
*South West Africa ^a	318,099	539

for Footnotes, see end of table, p. 215.

29.—Areas and Populations of the Countries or Areas of the World, 1958—continued

Continent and Country	Area	Population
	sq. miles	'000
America, North		
*Canada.....	3,851,809	17,442 ¹
Costa Rica.....	19,653	1,076
Cuba.....	44,218	6,466
Dominican Republic.....	18,816	2,797
El Salvador.....	7,722	2,434
Guatemala.....	42,042	3,546
Haiti.....	10,714	3,424
Honduras.....	43,277	1,828
Mexico.....	760,337	32,348
Nicaragua.....	57,143	1,378
Panama.....	28,753	995
United States of America ²	3,615,213	174,809 ³
TERRITORIES AND DEPENDENCIES		
Denmark—		
Greenland.....	840,001	28
France—		
Guadeloupe and dependencies.....	687	259
Martinique.....	425	265
St. Pierre and Miquelon.....	93	5
Netherlands—		
Netherlands Antilles.....	371	193
United Kingdom—		
*Bahama Islands.....	4,400	133
*Bermuda.....	20	43
*British Honduras.....	8,866	85
*Virgin Islands (U.K.).....	67	8
West Indies—		
*Antigua.....	171	57
*Barbados.....	166	235
*Dominica.....	305	64
*Grenada.....	133	92
*Jamaica, excl. dependencies.....	4,411	1,630
*Montserrat.....	32	14
*St. Kitts-Nevis and Anguilla.....	153	58
*St. Lucia.....	238	92
*St. Vincent.....	150	82
*Trinidad and Tobago.....	1,980	789
United States—		
Canal Zone.....	553	57 ⁴
Puerto Rico.....	3,435	2,316 ⁵
Virgin Islands (U.S.).....	133	31 ⁶
America, South		
Argentina.....	1,072,748	20,248
Bolivia.....	424,163	3,349 ¹
Brazil.....	3,287,204	62,725 ¹⁰
Chile.....	286,397	7,298
Colombia.....	439,520	13,522
Ecuador.....	104,506	4,067 ¹¹
Paraguay.....	157,047	1,077
Peru.....	496,223	10,213 ¹²
Uruguay.....	72,172	2,700
Venezuela.....	352,143	6,320 ¹³
TERRITORIES AND DEPENDENCIES		
France—		
French Guiana.....	35,135	30
Netherlands—		
Surinam.....	55,144	241 ¹⁴
United Kingdom—		
*British Guiana.....	83,000	532
*Falkland Islands, excl. dependencies.....	4,618	■

For footnotes, see end of table, p. 215.

29.—Areas and Populations of the Countries or Areas of the World, 1953—continued

Continent and Country	Area	Population
	sq. miles	'000
Asia		
Afghanistan.....	250,966	13,000
Bahrain.....	231	139
*Bhutan.....	19,305	650
Burma.....	261,757	20,255
Cambodia.....	66,607	4,740
*Ceylon.....	25,332	9,388
China (mainland).....	3,768,736	640,000 ¹
China (Taiwan and Pescadores).....	13,885	9,851 ¹
*Federation of Malaya.....	50,690	6,515
*India, incl. Kashmir-Jammu.....	1,267,094	397,540
Indonesia.....	575,894	86,900
Iran.....	629,345	19,723
Iraq.....	171,600	6,700
Israel.....	7,992	1,997
Japan.....	142,726	91,760
Jordan.....	37,301	1,580
Korea.....	85,248	30,505
North Korea.....	47,824	8,000
Republic of Korea.....	37,424	22,505
Kuwait.....	6,000	210
Laos.....	91,429	1,690
Lebanon.....	4,015	1,525 ¹
*Maldiv Islands.....	115	82
Mongolian People's Republic.....	591,121	1,040
Muscat and Oman.....	82,000	550
Nepal.....	54,362	8,910
*Pakistan.....	364,797	85,635
Philippines.....	115,600	24,010
Qatar.....	8,500	40
Saudi Arabia.....	617,762	6,036 ¹
*Sikkim.....	2,744	150
Thailand.....	198,456	21,474
Trucial Oman.....	32,278	86
Turkey.....	299,993 ¹	25,932
In Asia.....	287,118	23,804
In Europe.....	9,068	2,128
Viet Nam—		
North Viet Nam.....	59,924	15,000
Republic of Viet Nam.....	65,958	12,800
Yemen.....	75,290	4,500 ¹
TERRITORIES AND DEPENDENCIES		
Netherlands—		
Netherlands New Guinea.....	159,375	700
Portugal—		
Macau.....	6	210
Portuguese India.....	1,619	649
Portuguese Timor.....	5,763	490
United Kingdom—		
Aden—		
*Aden Colony.....	80	150
*Aden Protectorate.....	112,000	650
*Brunei.....	2,226	77
*Cyprus.....	3,572	549
*Hong Kong.....	301	2,748
*North Borneo.....	29,388	409
*Sarawak.....	47,500	655
*Singapore Island.....	224	1,515
FORMER MANDATED TERRITORY		
(United Kingdom)		
Palestine.....	10,459	1,912 ¹
Gaza Strip.....	78	345
MILITARY GOVERNMENT		
(United States)		
Bonin Islands.....	40	
Ryukyu Islands.....	848	838

For footnotes, see end of table, p. 215.

29.—Areas and Populations of the Countries or Areas of the World, 1958—continued

Continent and Country	Area sq. miles	Population '000
Europe		
Albania.....	11,100	1,507
Andorra.....	175	6
Austria.....	32,374	7,021 ²
Belgium.....	11,779	9,053 ²
Bulgaria.....	43,048	7,728
Czechoslovakia.....	49,366	13,470
Denmark.....	16,619	4,515 ²
Finland.....	130,120	4,376
France (Metropolitan).....	212,822	44,558
Germany—		
Eastern Germany.....	41,479	16,263 ²
Federal Republic of Germany.....	95,738	52,150 ²
East Berlin.....	156	1,100 ²
West Berlin.....	186	2,224 ²
Greece.....	51,182	8,173
Hungary.....	35,919	9,887
Iceland.....	39,768	169 ²
Ireland.....	27,136	2,853
Italy.....	116,304	48,735
Liechtenstein.....	61	15
Luxembourg.....	998	320 ²
Monaco.....	--	21
Netherlands.....	12,529 ¹⁷	11,186 ²
Norway.....	125,065	3,526 ²
Poland.....	120,359	28,783
Portugal ¹⁸	35,599	8,981
Romania.....	91,699	18,059
San Marino.....	24	15
Spain ¹⁹	194,396	29,662
Sweden.....	173,623	7,415 ²
Switzerland.....	15,941	5,185 ²
*United Kingdom of Great Britain and Northern Ireland.....	94,215	51,870 ²⁰
England and Wales.....	58,345	45,244
Northern Ireland.....	6,459	1,403
Scotland.....	30,411	5,223
Vatican.....	--	1
Yugoslavia.....	98,766	18,189
TERRITORIES AND DEPENDENCIES		
Denmark—		
Faeroe Islands.....	540	34 ²
Norway—		
Svalbard and Jan Mayen Islands.....	24,101	1 ²¹
United Kingdom—		
*Channel Islands.....	75	99
*Gibraltar.....	2	28
*Isle of Man.....	227	55
*Malta and Gozo.....	122	322
Oceania		
*Australia, excl. aborigines.....	2,974,583	9,846
*New Zealand.....	103,473	2,282
TERRITORIES AND DEPENDENCIES		
Australia—		
*Christmas Island.....	60	3
*Cocos (Keeling) Islands.....	5	1
*Norfolk Island.....	14	1
*Papua.....	90,540	487
France—		
French Polynesia.....	1,544	79
New Caledonia and dependencies.....	7,336	69
New Zealand—		
*Cook Islands.....	90	17
*Niue.....	100	5
*Tokelau Islands.....	4	2

For footnotes, see end of table, p. 215.

29.—Areas and Populations of the Countries or Areas of the World, 1958—concluded

Continent and Country	Area	Population
	sq. miles	'000
Oceania—concluded		
TERRITORIES AND DEPENDENCIES—concluded		
United Kingdom—		
*British Solomon Islands.....	11,500	105
*Fiji Islands.....	7,055	368
*Gilbert and Ellice Islands.....	349	44
*Pitcairn.....	2	--
*Tonga.....	269	60
United States—		
American Samoa.....	76	21
Guam.....	206	38
TRUST TERRITORIES		
*Nauru (Aust., N.Z., and U.K. Adm.).....	8	4
*New Guinea (Aust. Adm.).....	93,000 ¹⁷	1,341
Pacific Islands (U.S. Adm.).....	687 ²²	71
*Western Samoa (N.Z. Adm.).....	1,130	102
CONDOMINIUMS		
*Canton and Enderbury (Anglo-American).....	20	--
*New Hebrides (Anglo-French).....	5,700	56
Union of Soviet Socialist Republics		
Union of Soviet Socialist Republics.....	8,649,821	208,826 ¹

¹ Latest official estimate. ² *De jure* population. ³ Excluding Walvis Bay. ⁴ Excluding nomad population in Egypt (55,073 at 1947 census) and Palestinian refugees in Syria (113,204 on Dec. 31, 1957).
⁵ Including nomad and other population estimated at 34,400 in 1946. ⁶ Including Walvis Bay. ⁷ Including Alaska and Hawaii which became the 49th and 50th States of the union on Jan. 3 and Aug. 21, 1959, respectively. ⁸ *De jure* population, but excluding civilians absent from the country for extended periods. ⁹ *De jure* population but including armed forces stationed in the area. ¹⁰ Excluding Indian jungle population numbering 45,429 in 1950. ¹¹ *De jure* population but excluding Indian jungle population. ¹² Including estimate of 350,000 for Indian jungle population. ¹³ Excluding Indian jungle population numbering 56,705 in 1950. ¹⁴ Excluding Indian and Negro population living in tribes estimated at 26,000 in 1958. ¹⁵ Excluding armed forces and foreigners. ¹⁶ Including 3,807 sq. miles of swamps and lakes. ¹⁷ Land area only. ¹⁸ Including the Azores and Madeira Islands. ¹⁹ Including the Balearic and Canary Islands. ²⁰ Including armed forces outside the country but excluding Commonwealth and foreign armed forces stationed in the area. ²¹ Inhabited only during winter season; included in the *de jure* population of Norway. ²² Inhabited dry land only.

CHAPTER IV.—IMMIGRATION AND CITIZENSHIP

CONSPECTUS

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NOTE.—The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

PART I.—IMMIGRATION AND EMIGRATION*

The history of immigration and the Immigration Act and Regulations is dealt with in detail in a special article entitled "Developments in Canadian Immigration" appearing in the 1957-58 Year Book at pp. 154-176. Supplementing that material is an article on the "Integration of Postwar Immigrants" at pp. 176-178 of the 1959 edition.

Section 1.—Immigration Policy and Administration

Since the end of the Second World War it has been the policy of the Government of Canada to stimulate the growth of the population by selective immigration. Efforts are made to choose immigrants of prospective adaptability to the Canadian way of life and to admit them at such times and in such numbers as employment conditions warrant.

Federal immigration policy is governed by the provisions of the Immigration Act and Regulations, which permit the admission to Canada of British subjects by birth or naturalization in the United Kingdom, Australia, New Zealand or South Africa; citizens of Ireland and of the United States; and French citizens born or naturalized in France or on the islands of St. Pierre and Miquelon. All, however, must be in good health, be of good character, and have sufficient means to maintain themselves until they have secured employment. Other classes of admissible immigrants consist of persons considered to be desirable in the light of social and economic conditions prevailing in Canada at the time, and possessed of qualifications for successful integration. Also admissible are wives, husbands, unmarried children under 21 years of age, fathers over 65 and mothers over 60 of legal residents of Canada who are in a position to receive and care for their dependants, provided such dependants satisfy the requirements of the Immigration Act and Regulations. Agreements are in effect with the governments of India, Pakistan and Ceylon for the admission annually of 300, 100 and 50 persons, respectively, from those countries in addition to certain close relatives.

The Immigration Branch of the Department of Citizenship and Immigration administers the Immigration Act and Regulations. Twenty-seven visa officers are located abroad at London, Liverpool, Leeds, Bristol, Glasgow, Belfast, Dublin, Paris, Brussels, Berne, The Hague, Copenhagen, Cologne, Berlin, Hamburg, Munich, Stuttgart, Vienna, Oslo, Stockholm, Helsinki, Lisbon, Rome, Athens, Tel Aviv, New Delhi and Hong Kong. Four offices in the United States—at New York, Chicago, Los Angeles and Minneapolis—

* Sections 1 and 2 of this Part were revised under the direction of the Deputy Minister, Department of Citizenship and Immigration, Ottawa.

furnish information and counselling but do not issue visas. Personnel at all posts are kept in close touch with economic conditions in Canada and thus are able to advise immigrants regarding prospects for successful settlement. Examination of immigrants and visitors is carried out at 343 ports of entry on the Canadian coasts, at points along the International Boundary, and at certain airports.

A primary objective of administration is satisfactory settlement. The Federal Government assists immigrants in establishing themselves in the Canadian community through the work of the Immigration Branch Settlement Service, the Canadian Citizenship and Canadian Citizenship Registration Branches and other government agencies, and co-operates closely with several voluntary agencies having the same objective.

Section 2.—Immigration Statistics

Postwar Immigration.—The extent of immigration to Canada in any period is affected both by domestic conditions and by conditions abroad. However, these influences are seldom immediately decisive. News of good economic conditions in Canada predisposes people in favour of this country but, because the immigration process usually takes from six to eighteen months, actual immigration is not always fully coincidental with the economic situation, so that immigration may at times be slight in good years but appear unduly heavy in less buoyant periods. The time-lag caused by selection, medical examination and documentation is unavoidable. Transportation is often another delaying factor and to these considerations must be added the effect of seasonal unemployment in Canada, which tends to discourage immigration during the months from November to April.

Since the end of World War II there have been wide annual fluctuations in immigration to Canada caused mainly by economic and political factors. Many of the persons who arrived in 1946 and 1947 were the wives and children of Canadian service men and their numbers were dictated by the availability of shipping. In 1948, as more shipping became available, the number of immigrants doubled. In addition to the large movement from the United Kingdom, thousands of displaced persons were admitted and Germans and Italians began to come forward in appreciable numbers after having been removed from the enemy alien category. As the high level of immediate postwar economic activity levelled off, there was a drop of 30,000 in the number of immigrants entering in 1949 compared with 1948, and a further drop of 20,000 in 1950. Then the outbreak of war in Korea created a new stimulus to industry and caused shortages of labour; at the same time fear of war in Europe made Canada seem a desirable haven. Thus in 1951 immigration increased nearly threefold and remained in excess of 150,000 for the following three years. Very significant numbers of Germans and Italians were admitted and the gap between them and the British Isles group was narrowed. Another minor economic setback in 1954 caused immigration to fall in 1955 by some 45,000 but, with the return of better times in North America and the deterioration of the political situation in Europe, immigration again rose by 55,000 in 1956. The Hungarian revolution and the Suez crisis of 1956 had a sharp impact on Canadian immigration in 1957 when 282,164 persons were admitted, including 31,643 from Hungary and 108,989 from the United Kingdom. This was the largest number of immigrants to enter Canada since 1913. The conclusion of the Suez affair and the suppression of the Hungarian revolt restored some measure of calm in Europe. Canada's economy suffered a recession in 1956 and 1957 while Europe's economic position improved, as a result of which only 124,851 immigrants came to Canada in 1958. The United Kingdom's recovery from the war and its aftermath was reflected in the fact that for the first time in the postwar years the British Isles group of arrivals was not the largest—persons from Italy were in first place, numbering 27,043 compared with 24,777 from the United Kingdom.

Immigration from the United Kingdom during the period 1946-59, inclusive, was 561,059 representing 29.5 p.c. of the total immigration to Canada in that period. Other large groups came from Italy, numbering 239,129 and representing 12.6 p.c. of the total; Germany, 224,000 representing 11.8 p.c.; Netherlands, 141,971 representing 7.5 p.c.; United States, 133,878 representing 7.0 p.c.; and Poland, 87,167 representing 4.6 p.c.

In each postwar year, except 1958 and 1959, the British Isles group was the largest, ranging from a low of 12,669 in 1950 to a high of 108,989 in 1957. Immigrants from the United States formed the second largest group in 1946 and 1947, and from Poland in 1948, 1949 and 1950. Persons from Germany filled this position from 1951 to 1954, in which years persons from Italy and the Netherlands also arrived in substantial numbers. In 1955 and 1956 persons from Italy were in second place but Hungarians took that position in 1957. Immigrants from Italy headed all groups in 1958 and 1959. During the whole postwar period, immigration from the United States has remained relatively constant, ranging from a high of 11,474 in 1946 to a low of 7,393 in 1948; the annual average for the period was 9,563.

Total immigration to Canada for the years 1946-59, inclusive, was 1,901,119. The yearly totals for this period are shown in Table 1, together with annual figures back to 1913, the peak year of immigration into Canada.

1.—Immigrant Arrivals, 1913-59

NOTE.—Figures for 1852-93 are given in the 1942 Year Book, p. 153, and for 1894-1912 in the 1948-49 edition, p. 175.

Year	Arrivals	Year	Arrivals	Year	Arrivals	Year	Arrivals	Year	Arrivals
	No.		No.		No.		No.		No.
1913.....	400,870	1923.....	133,729	1933.....	14,382	1942.....	7,576	1951.....	194,391
1914.....	150,484	1924.....	124,164	1934.....	12,476	1943.....	8,504	1952.....	164,498
1915.....	36,665	1925.....	84,907	1935.....	11,277	1944.....	12,801	1953.....	168,868
1916.....	55,914	1926.....	135,982	1936.....	11,643	1945.....	22,722	1954.....	154,227
1917.....	72,910	1927.....	153,835	1937.....	15,101	1946.....	71,719	1955.....	109,946
1918.....	41,845	1928.....	166,783	1938.....	17,244	1947.....	64,127	1956.....	164,857
1919.....	107,698	1929.....	164,993	1939.....	16,994	1948.....	125,414	1957.....	282,164
1920.....	138,824	1930.....	104,806	1940.....	11,324	1949.....	85,217	1958.....	124,851
1921.....	91,728	1931.....	27,530	1941.....	9,329	1950.....	73,912	1959.....	106,928
1922.....	64,224	1932.....	20,591						

Admissions by country of last permanent residence are given in Table 2 for the years 1955-59 only. During that five-year period 30.7 p.c. of the immigration flow came from the United Kingdom and Ireland, 55.7 p.c. from Continental Europe, 6.8 p.c. from the United States and 6.8 p.c. from all other countries.

2.—Immigrant Admissions by Country of Last Permanent Residence, 1955-59

NOTE.—Comparable figures for 1946-49 are given in the 1951 Year Book, p. 143, for 1950-52 in the 1956 edition, p. 182 and for 1953 and 1954 in the 1959 edition, p. 179; figures in less detail for 1939-45 appear in the 1950 edition, p. 186.

Country	1955	1956	1957	1958	1959
	No.	No.	No.	No.	No.
British Isles—					
England.....	21,813	36,422	79,811	18,011	12,825
Northern Ireland.....	1,397	2,967	4,988	1,140	970
Scotland.....	5,472	10,055	22,180	5,060	4,053
Wales.....	546	802	1,724	456	311
Lesser Isles.....	154	144	286	110	63
Totals, British Isles.....	29,382	50,390	108,989	24,777	18,222
Other Commonwealth.....	4,548	5,191	7,383	7,044	6,524
Totals, Commonwealth.....	33,930	55,581	116,372	31,821	24,746

2.—Immigrant Admissions by Country of Last Permanent Residence, 1955-59—concluded

Country	1955	1956	1957	1958	1959
	No.	No.	No.	No.	No.
Republic of Ireland.....	1,038	2,229	5,358	1,226	815
Continental Europe—					
Austria.....	2,871	4,330	5,714	4,544	1,510
Belgium.....	1,751	3,080	3,909	1,776	1,471
Denmark.....	1,339	3,573	7,633	1,746	1,359
France.....	2,869	3,809	5,869	2,727	2,153
Germany.....	17,630	26,061	28,430	13,888	10,423
Greece.....	2,856	4,986	5,460	5,190	4,867
Hungary.....	187	4,010	31,643	2,362	589
Italy.....	19,139	27,939	27,740	27,043	25,655
Netherlands.....	6,759	7,792	11,934	7,420	5,243
Poland.....	113	186	690	2,292	3,470
Portugal.....	1,136	1,697	4,423	1,938	4,080
Other European countries.....	3,288	5,067	8,980	4,984	7,758
United States ¹	10,395	9,777	11,008	10,846	11,338
Other countries.....	4,645	4,740	6,951	5,048	1,451
Totals, All Countries.....	109,946	164,857	282,164	124,851	106,928

¹ Includes U.S. citizens on permit but applying for permanent residence.

Other analyses of the content of the immigration movement in recent years are given in Tables 3 to 9. The numbers of persons refused admission at ports of entry and those deported from Canada in the years 1957-59 are shown in Table 10.

Sex, Age and Marital Status.—In the ten-year period 1950-59 adult males comprised 41.0 p.c. of the immigrant arrivals, adult females 33.5 p.c. and children under 18 years of age the remaining 25.5 p.c. Without relation to age, 54.4 p.c. of the newcomers were males.

3.—Sex Distribution of Immigrants as Adult Males, Adult Females and Children, 1950-59

NOTE.—Figures from 1930 are given in the corresponding table of previous Year Books beginning with the 1946 edition.

Year	Adult Males	Adult Females	Under 18 Years		Total
			Males	Females	
	No.	No.	No.	No.	No.
1950.....	30,700	24,172	10,287	8,753	73,912
1951.....	95,818	53,239	24,348	20,986	194,391
1952.....	66,083	53,443	23,766	21,206	164,498
1953.....	68,269	56,425	23,153	21,021	168,868
1954.....	64,551	51,690	19,980	18,006	154,227
1955.....	42,425	40,120	14,403	12,998	109,946
1956.....	67,880	55,574	21,661	19,742	164,857
1957.....	115,765	92,202	38,461	35,736	282,164
1958.....	44,008	48,655	16,622	15,566	124,851
1959.....	37,110	41,891	14,366	13,561	106,928

In 1959, 75.7 p.c. of the males and 78.9 p.c. of the females arriving were 15 years of age or over as compared with 75.9 p.c. and 78.8 p.c. respectively in 1958. Of those arriving in 1959 who were 15 years of age or over, 50.8 p.c. were married, 43.3 p.c. were single and 5.5 p.c. were widowed or divorced. The total number of single males exceeded the number of single females by 3,305 but there were more females than males in the widowed and divorced categories. In the single class, males were 11.7 p.c. more numerous than females, the numerical superiority being particularly heavy in the age group 15-29 years.

4.—Sex and Marital Status of Immigrant Arrivals, by Age Group, 1958 and 1959

Year and Age Group	MALES					
	Single	Married	Widowed	Divorced	Separated	Total
	No.	No.	No.	No.	No.	No.
1958						
0 - 14 years.....	14,599	—	—	—	—	14,599
15 - 19 ".....	5,134	55	1	1	1	5,192
20 - 24 ".....	9,336	1,964	2	4	1	11,307
25 - 29 ".....	5,586	4,717	6	45	9	10,363
30 - 39 ".....	2,436	8,206	23	138	37	10,840
40 - 49 ".....	379	4,017	40	96	12	4,544
50 - 59 ".....	105	2,070	90	29	13	2,307
60 years or over.....	62	1,078	310	22	6	1,478
Totals.....	37,637	22,107	472	335	79	60,630
	FEMALES					
	Single	Married	Widowed	Divorced	Separated	Total
	No.	No.	No.	No.	No.	No.
0 - 14 years.....	13,584	—	—	—	—	13,584
15 - 19 ".....	4,410	1,072	1	1	—	5,484
20 - 24 ".....	7,702	5,873	6	31	14	13,626
25 - 29 ".....	3,797	5,975	23	92	23	9,910
30 - 39 ".....	2,898	7,770	147	307	49	10,671
40 - 49 ".....	462	3,367	368	206	65	4,468
50 - 59 ".....	206	2,005	953	202	90	3,486
60 years or over.....	198	943	1,724	79	48	2,992
Totals.....	32,757	27,005	3,252	918	289	64,221
	MALES					
	Single	Married	Widowed	Divorced	Separated	Total
	No.	No.	No.	No.	No.	No.
1959						
0 - 14 years.....	12,531	—	—	—	—	12,531
15 - 19 ".....	4,387	46	—	—	—	4,433
20 - 24 ".....	7,661	1,567	1	8	2	9,130
25 - 29 ".....	4,526	3,900	2	29	13	8,470
30 - 39 ".....	2,169	7,044	20	97	34	9,364
40 - 49 ".....	328	3,500	43	78	15	3,964
50 - 59 ".....	95	1,949	88	30	14	2,176
60 years or over.....	56	1,000	298	33	12	1,399
Totals.....	31,653	19,006	452	275	90	51,476
	FEMALES					
	Single	Married	Widowed	Divorced	Separated	Total
	No.	No.	No.	No.	No.	No.
0 - 14 years.....	11,675	—	—	—	—	11,675
15 - 19 ".....	3,678	934	1	6	—	4,619
20 - 24 ".....	6,532	4,956	10	30	7	11,535
25 - 29 ".....	3,367	5,001	18	72	15	8,473
30 - 39 ".....	2,198	6,589	106	219	47	9,159
40 - 49 ".....	491	2,981	347	179	53	4,051
50 - 59 ".....	219	1,778	919	181	83	3,180
60 years or over.....	188	812	1,643	82	35	2,760
Totals.....	28,348	23,051	3,044	769	240	55,452

Birthplace, Nationality and Origin.—Of the immigrant arrivals in 1959, 22.4 p.c. were born in Commonwealth countries or in the Republic of Ireland, compared with 25.0 p.c. in 1958, 41.8 p.c. in 1957, 33.5 p.c. in 1956, 30.3 p.c. in 1955, 31.2 p.c. in 1954 and 29.9 p.c. in 1953. In 1959, 38.5 p.c. of the newcomers were born in Italy, Germany or the Netherlands, 8.3 p.c. were born in the United States and 30.6 p.c. in other countries.

5.—Birthplaces of Immigrant Arrivals, 1957-59

NOTE.—Figures from 1942 are given in the corresponding table of previous Year Books beginning with the 1948-49 edition.

Birthplace	1957	1958	1959	Birthplace	1957	1958	1959
No.	No.	No.	No.	No.	No.	No.	No.
Commonwealth—				Continent of South America.....	763	689	544
British Isles—				Continent of Asia—			
England.....	71,750	16,050	11,168	China.....	1,740	2,527	2,367
Northern Ireland.....	5,358	1,308	1,045	Israel.....	245	234	518
Scotland.....	22,528	5,312	4,326	Japan.....	204	193	193
Wales.....	2,345	574	409	Other.....	924	757	844
Lesser Isles.....	220	75	45	Continent of Europe—			
Totals, British Isles....	102,201	23,319	16,993	Austria.....	2,620	1,158	975
Other Commonwealth—				Belgium.....	3,126	1,190	960
Africa (British).....	811	577	495	Czechoslovakia.....	933	440	357
Australia.....	2,582	1,487	929	Denmark.....	7,707	1,780	1,365
Canada.....	650	736	795	Finland.....	2,833	1,263	900
India.....	894	629	770	France.....	4,845	2,384	1,769
New Zealand.....	608	431	324	Germany.....	26,486	13,015	9,704
West Indies (British).....	1,217	1,221	1,258	Greece.....	5,464	5,286	4,898
Other.....	1,481	1,072	1,118	Hungary.....	31,897	2,985	1,362
Republic of Ireland.....	7,626	1,685	1,243	Italy.....	28,694	28,062	26,334
Continent of Africa (other than British).....	2,540	997	624	Latvia.....	379	195	151
Continent of North America—				Lithuania.....	199	153	96
Central America.....	33	19	23	Netherlands.....	11,689	7,182	5,092
Mexico.....	119	105	88	Norway.....	1,333	462	366
United States.....	9,092	8,460	8,873	Poland.....	3,182	3,462	4,225
Other.....	94	108	133	Romania.....	957	444	541
				Switzerland.....	1,510	923	727
				Union of Soviet Socialist Republics.....	1,150	835	1,033
				Yugoslavia.....	6,262	5,095	2,624
				Other.....	6,655	2,992	5,051
				Grand Totals.....	282,164¹	124,851²	106,928³

¹ In both Europe and Asia. ² Includes 12 born at sea and 397 not stated.

³ Includes 4 born at sea and 295 not stated.

⁴ Includes 206 not stated.

Out of every hundred immigrants admitted to Canada during the three-year period 1957-59, 16 were citizens of Italy, 31 were British subjects, 10 were citizens of Germany, 6 of the United States, 5 of the Netherlands, and 3 of Greece; other nationalities made up the remaining 29.

6.—Citizenship of Immigrant Arrivals, 1957-59

NOTE.—Figures from 1930 are given in the corresponding table of previous Year Books beginning with the 1936 edition.

Country of Citizenship	1957	1958	1959	Country of Citizenship	1957	1958	1959
No.	No.	No.	No.	No.	No.	No.	No.
Australia.....	2,738	1,798	1,118	Finland.....	2,811	1,261	890
Austria.....	2,498	1,033	897	France.....	6,204	2,845	1,933
Belgium.....	2,917	1,087	875	Germany.....	28,513	14,107	10,401
Central America.....	18	12	14	Greece.....	5,498	5,273	4,894
Ceylon.....	15	33	24	Hungary.....	31,801	2,315	626
China.....	1,560	2,473	2,313	India.....	177	334	582
Czechoslovakia.....	14	25	32	Ireland.....	6,398	1,439	950
Denmark.....	7,780	1,784	1,381	Israel.....	637	577	1,577
Egypt.....	156	47	37	Italy.....	28,935	28,242	26,564
Estonia.....	23	22	12	Japan.....	180	183	190

6.—Citizenship of Immigrant Arrivals, 1957-59—concluded

Country of Citizenship	1957	1958	1959	Country of Citizenship	1957	1958	1959
No.	No.	No.	No.	No.	No.	No.	No.
Latvia.....	101	38	19	Switzerland.....	1,515	896	725
Lebanon.....	416	317	383	Syria.....	18	14	7
Lithuania.....	27	39	10	Tunisia.....	55	63	35
Luxembourg.....	159	36	21	Turkey.....	120	214	217
Mexico.....	88	94	86	Union of South Africa.....	513	411	341
Morocco.....	320	209	126	U.S.S.R.....	48	27	36
Netherlands.....	12,132	7,488	5,310	United Kingdom and Colonies.....	109,252	26,885	20,372
New Zealand.....	596	453	388	United States.....	10,087	9,695	10,240
Norway.....	1,321	461	363	Yugoslavia.....	1,050	935	944
Pakistan.....	83	62	64	Other African.....	63	8	3
Poland.....	810	2,367	3,509	Other Asian.....	62	37	53
Portugal.....	4,486	1,963	4,176	Other European.....	119	113	172
South America.....	506	513	451	Others.....	7,771	5,861	2,872
Southern Rhodesia.....	40	25	26				
Spain.....	845	447	382				
Sweden.....	788	292	287				
				Totals.....	282,164	124,851	106,928

Immigrants of Continental European origin comprised 71.5 p.c. of the influx during 1959 and those of British origin made up 23.3 p.c. Proportions of Continental Europeans in 1958 and 1957 were 70.0 p.c. and 56.6 p.c., respectively, and British origin 26.0 p.c. and 42.0 p.c. in the same periods.

7.—Origins of Immigrant Arrivals, 1957-59

NOTE.—Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1939 edition.

Origin	1957	1958	1959	Origin	1957	1958	1959
No.	No.	No.	No.	No.	No.	No.	No.
British—				Continental European—			
English.....	75,546	20,224	15,034	concluded			
Irish.....	15,828	4,792	3,834	Scandinavian—			
Scottish.....	24,633	6,713	5,526	Danish.....	7,883	1,908	1,501
Welsh.....	2,629	760	563	Icelandic.....	61	52	30
Totals, British.....	118,536	32,489	24,957	Norwegian.....	1,536	658	517
				Swedish.....	991	471	484
Continental European—				Spanish ¹	1,235	685	599
Albanian.....	26	15	21	Swiss ²	1,358	855	679
Austrian.....	2,364	971	784	Ukrainian.....	530	405	346
Belgian.....	2,811	1,017	844	Yugoslavic ²	5,771	4,930	2,360
Bulgarian.....	59	21	52	Totals, Continental			
Czech.....	360	198	207	European.....	159,564	87,371	76,401
Estonian.....	226	131	103				
Finnish.....	2,884	1,296	944	Other—			
French.....	5,214	3,292	2,622	Arabian.....	91	75	62
German.....	31,191	15,842	12,481	Armenian.....	285	197	242
Greek.....	5,706	5,476	5,035	Chinese.....	1,686	2,630	2,586
Hungarian.....	29,911	2,788	1,101	East Indian.....	354	459	741
Italian.....	29,763	28,878	27,223	Indian (American).....	24	24	30
Jewish.....	6,037	2,895	3,395	Japanese.....	185	193	197
Latvian.....	434	212	140	Lebanese.....	361	260	288
Lithuanian.....	190	170	110	Mexican.....	20	34	23
Luxembourg.....	127	26	12	Negro.....	723	881	1,104
Maltese.....	657	482	424	Persian.....	24	13	—
Netherlands.....	12,720	7,933	5,684	Syrian.....	92	33	59
Polish.....	3,096	3,171	3,960	Turkish.....	93	103	86
Portuguese.....	4,768	2,188	4,372	Not stated.....	146	89	152
Romanian.....	213	153	169	Totals, Other.....	4,064	4,391	5,570
Russian.....	442	252	202	Grand Totals.....	282,164	124,851	106,928

¹ Includes a few minor groups, such as German, French, Italian, etc.

² Reported as Swiss origin but evidently one of the constituent races

Destinations and Occupations.—Upon arrival in Canada, immigrants are asked to state their intended destination. According to these records, Ontario absorbed by far the highest proportion of arrivals in the four-year period 1956-59—51.4 p.c. of all the males and 54.0 p.c. of all the females. Quebec was the second most important province of destination, receiving 20.8 p.c. of the males and 20.3 p.c. of the females. The proportions intending to settle in British Columbia were 11.9 p.c. and 11.5 p.c., respectively; in the Prairie Provinces 13.0 p.c. and 11.6 p.c., respectively; and in the Atlantic Provinces 2.0 p.c. and 2.0 p.c., respectively. The provincial distribution has changed little from year to year throughout the whole postwar period.

8.—Intended Destinations of Male and Female Immigrants Admitted to Canada, 1956-59

Province	1956			1957		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
Newfoundland.....	212	214	426	206	289	495
Prince Edward Island.....	61	51	112	67	67	134
Nova Scotia.....	889	750	1,639	1,447	1,342	2,789
New Brunswick.....	488	364	852	906	768	1,674
Quebec.....	16,904	14,492	31,396	30,941	24,132	55,073
Ontario.....	48,232	42,430	90,662	77,632	69,465	147,097
Manitoba.....	3,354	2,442	5,796	6,921	4,663	11,614
Saskatchewan.....	1,234	968	2,202	2,538	1,839	4,427
Alberta.....	5,671	4,288	9,959	12,186	8,945	21,131
British Columbia.....	9,870	7,942	17,812	21,224	16,304	37,528
Yukon and Northwest Territories...	55	63	118	108	94	202
Canada.....	89,541¹	75,316¹	164,857¹	154,226	127,938	282,164
	1958			1959		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
Newfoundland.....	190	183	373	175	170	345
Prince Edward Island.....	38	40	78	47	44	91
Nova Scotia.....	933	853	1,786	523	564	1,087
New Brunswick.....	547	484	1,031	307	333	640
Quebec.....	13,994	14,449	28,443	12,253	12,563	24,816
Ontario.....	30,542	33,311	63,853	26,657	29,319	55,976
Manitoba.....	2,566	2,166	4,732	1,839	1,771	3,610
Saskatchewan.....	1,343	1,252	2,595	877	938	1,815
Alberta.....	4,180	4,249	8,429	3,554	3,869	7,423
British Columbia.....	6,235	7,165	13,400	5,177	5,823	11,000
Yukon and Northwest Territories...	62	69	131	67	58	125
Canada.....	60,630	64,221	124,851	51,476	55,452	106,928

¹ Includes 2,571 males and 1,312 females whose destination was unknown.

In like manner, immigrant arrivals are asked to record the occupations which they intend to follow in Canada. Approximately 50.1 p.c. of the persons admitted in 1959 declared that they would enter the labour force. The other 49.9 p.c. were wives, children and other dependants or were retired persons. Of the male workers, 13.9 p.c. were classed as professional and managerial, 13.3 p.c. were in agricultural occupations, 4.7 p.c. in service occupations, 31.4 p.c. in manufacturing, mechanical and construction trades, and 24.1 p.c. were general labourers. Almost 50 p.c. of the female immigrants entering the labour force were intending to follow service occupations. Details are given in Table 9.

Service—concluded

Nurses' aides.....	141	623	764	255	1,208	1,463	71	681	752	79	644	723
Cooks.....	571	182	753	650	282	932	308	113	421	273	91	364
Domestic servants.....	103	8,601	8,704	97	10,148	10,245	62	7,816	7,878	52	6,682	6,714
Other non-professional service workers.....	2,252	568	2,820	2,719	1,007	3,726	1,272	457	1,729	959	353	1,312
Agricultural	7,397	103	7,500	10,704	134	10,888	4,992	79	5,071	4,867	98	4,965
Farmers and agriculturists.....	126	—	126	226	—	226	157	—	157	126	—	126
Farm labourers.....	7,271	103	7,374	10,478	134	10,612	4,835	79	4,914	4,741	98	4,839
Fishing, Trapping and Logging	505	—	505	827	—	827	169	—	169	123	—	123
Fishermen.....	23	—	23	28	—	28	21	—	21	21	—	21
Trappers.....	1	—	1	—	—	—	—	—	—	1	—	1
Bushman and lumbermen.....	481	—	481	799	—	799	148	—	148	101	—	101
Mining	1,142	2	1,144	1,866	—	1,866	344	—	344	248	—	248
Minefield workers.....	1,087	1	1,088	1,703	—	1,703	291	—	291	214	—	214
Other workers in mines, quarries.....	51	—	51	122	—	122	23	—	23	19	—	19
4	41	—	41	—	—	41	30	—	30	15	—	15
Manufacturing, Mechanical and Construction	27,332	1,932	29,264	49,966	4,410	54,376	16,022	1,454	17,476	11,459	1,333	12,792
Aircraft mechanics and repairmen.....	236	—	236	674	—	674	102	—	102	64	—	64
Automobile mechanics and repairmen.....	1,740	1	1,741	3,425	3	3,426	981	—	981	674	—	674
Bakers.....	806	9	815	1,001	29	1,030	481	15	496	351	9	360
Blacksmiths, hammermen, forgersmen.....	198	—	198	353	—	353	193	—	188	112	—	112
Boilermakers, platers.....	63	—	63	155	—	155	32	—	32	18	—	18
Brick and stone masons.....	2,567	—	2,567	3,122	—	3,122	1,385	—	1,385	1,124	—	1,124
Butchers and meat cutters.....	594	4	598	861	2	863	419	3	422	284	1	285
Butler and cheese makers.....	18	1	19	15	1	16	6	—	6	3	—	3
Cabinet and furniture makers.....	558	—	558	1,087	—	1,087	515	—	515	266	—	266
Carpenters.....	2,821	—	2,821	4,434	—	4,434	1,638	—	1,638	1,224	—	1,224
Compositors and typesetters.....	190	—	190	305	—	305	108	—	108	82	—	82
Construction and machinery operators.....	179	—	179	384	—	384	107	—	107	65	—	65
Cordmakers.....	4	—	4	23	—	23	3	—	3	5	—	5
Dressmakers and seamstresses.....	33	843	876	49	1,676	1,725	21	1	766	13	774	787
Electricians and wiremen.....	1,565	—	1,565	3,432	—	3,432	922	745	952	697	—	697
Electroplaters.....	103	—	115	157	45	105	14	—	14	15	—	15
Turners.....	1	12	1	12	4	202	70	12	82	57	12	69
Glove makers.....	4	—	5	4	—	4	8	—	5	1	—	1
Jewellers and watchmakers.....	202	4	206	345	17	362	133	7	140	104	—	104
Leather cutters.....	19	—	20	8	—	8	6	—	6	—	—	—
Machine operators.....	962	14	976	2,252	38	2,290	426	15	441	270	10	280
Mechanics.....	864	14	878	1,984	76	2,060	483	—	483	432	12	444
Mechanics and repairmen.....	1,942	—	1,942	3,322	—	3,322	1,206	—	1,206	909	—	909
Metal fitters and assemblers.....	1,654	—	1,666	3,357	32	3,389	861	12	863	389	3	402
Milliners.....	3	24	27	9	32	38	1	21	22	8	—	8
Millwrights.....	25	—	25	66	—	66	19	—	19	10	—	10
Moulders.....	182	—	182	386	—	387	107	—	107	64	—	64
Painters, decorators, glaziers.....	1,206	—	1,206	2,084	1	2,084	737	—	747	575	—	575
Patternmakers.....	81	—	81	189	—	189	38	—	28	16	—	16
Photoengravers and lithographers.....	39	—	39	49	—	49	26	—	26	14	—	14
Plasterers and latheers.....	217	—	217	364	—	364	132	—	112	85	—	85
Plumbers and pipe fitters.....	752	—	752	1,449	—	1,449	425	—	425	337	—	337
Printers and pressmen and plate printers.....	180	1	181	373	—	373	104	—	104	85	—	85

9.—Intended Occupations of Male and Female Immigrants Admitted to Canada, 1956-59—concluded

Intended Occupation	1956			1957			1958			1959		
	Males		Total	Males		Total	Males		Total	Males		Total
	No.	Females		No.	Females		No.	Females		No.	Females	
Manufacturing, Mechanical and Construction—concluded												
Radio repairmen.....	325	4	329	637	10	647	193	1	194	126	4	130
Sawyers (wood).....	44	—	44	57	—	57	19	—	19	16	—	16
Sheet metal workers and tinsmiths...	290	—	290	640	—	640	159	—	162	102	—	102
Shoemakers and shoe repairers.....	456	—	456	630	—	630	374	—	374	243	—	243
Spinners and weavers.....	77	41	118	153	177	330	38	19	57	23	20	43
Stationary engineers.....	196	—	196	387	—	387	96	—	96	85	—	85
Stonecutters and dressers.....	16	—	16	28	—	28	7	—	7	8	—	8
Tailors.....	609	104	713	1,015	185	1,200	483	80	573	409	82	491
Tanners.....	23	—	23	24	—	24	20	—	20	4	—	4
Toolmakers, diemakers and setters...	718	—	718	1,704	—	1,704	304	1	305	190	—	190
Upholsterers.....	228	9	237	378	17	395	94	4	98	87	4	91
Welders and flame cutters.....	868	2	870	1,700	8	1,708	563	10	565	290	—	290
Other workers in food products.....	183	13	196	380	39	419	108	2	110	69	10	79
Other workers in rubber products.....	45	—	45	91	4	95	23	—	23	21	1	22
Other workers in leather and leather products.....	55	12	67	120	39	159	40	4	44	19	5	24
Other workers in textiles.....	150	80	230	351	210	561	58	40	98	70	21	91
Other workers in clothing and textile goods.....	81	262	343	200	674	874	56	194	250	43	155	198
Other workers in wood products.....	296	8	304	473	17	490	128	2	130	89	4	93
Workers in pulp, paper and paper products.....	43	3	46	98	8	106	12	2	14	16	1	17
Other workers in printing and publishing.....	88	36	124	201	108	309	72	29	101	38	19	57
Other metal workers.....	460	7	467	946	7	953	219	3	222	224	3	227
Other workers in non-metallic mineral products.....	201	9	210	251	9	260	128	4	132	85	3	88
Other manufacturing and mechanical workers.....	1,425	401	1,826	2,848	942	3,790	809	213	1,022	616	171	787
Other construction workers.....	378	—	378	863	—	863	301	—	301	230	—	230
Labourers (other than agricultural, fishing, logging and mining).....	12,292	190	12,482	19,048	423	19,471	9,306	82	9,388	8,815	125	8,940
Not Stated.....	319	116	435	543	118	661	299	130	429	268	126	394
Totals, Workers.....	68,377	22,662	91,039	115,332	36,179	151,511	43,397	19,681	63,078	36,505	17,046	53,551
Dependants—												
Wives.....	—	30,547	30,547	—	52,533	52,533	—	24,795	24,795	—	21,223	21,223
Children.....	20,095	18,366	38,461	66,639	34,034	100,673	15,832	14,612	30,444	13,581	12,552	26,133
Others.....	1,069	3,741	4,810	2,255	5,192	7,447	1,401	5,133	6,534	1,390	4,631	6,021
Totals, Immigrants.....	89,541	75,316	164,857	154,226	127,938	282,164	60,630	64,221	124,851	51,476	55,452	106,928

Deportations.—Persons unable to meet the requirements of the Immigration Act and Regulations may be refused admission to Canada upon applying at ports of entry, and certain classes not considered suited to the Canadian way of life may be deported. Regulations covering rejections and deportations are given in the 1957-58 Year Book, pp. 173-174.

10.—Refusals and Deportations, by Cause and Nationality, 1957-59

NOTE.—Figures from 1903 are given in the corresponding table of previous Year Books.

REFUSALS				DEPORTATIONS AFTER ADMISSION ¹			
Cause and Nationality	1957	1958	1959	Cause and Nationality	1957	1958	1959
No.	No.	No.	No.	No.	No.	No.	No.
From Overseas—							
CAUSE				CAUSE			
Mental and medical.....	4	15	7	Mental and medical.....	55	81	107
Civil.....	67	125	132	Public charges.....	13	7	10
NATIONALITY				Criminality.....	145	170	232
British.....	20	54	51	Misrepresentation and stealth.....	262	338	317
Other.....	51	86	88	Other causes.....	34	68	85
Totals from Overseas.....				NATIONALITY			
From United States.....				British.....	155	155	204
Grand Totals, Refusals.....				United States.....	98	132	175
	71	140	139	Other.....	256	377	372
	768	988	1,221	Grand Totals, Deportations.....			
	839	1,128	1,360		509	664	751

¹ Includes deserting seamen deported.

Returning Canadians.—The numbers of Canadians returning to Canada during each of the ten years 1950-59 after having resided in the United States were:—

Year	No.	Year	No.
1950.....	3,518	1955.....	3,942
1951.....	3,635	1956.....	4,740
1952.....	4,707	1957.....	5,426
1953.....	4,606	1958.....	5,297
1954.....	4,516	1959.....	5,243

Section 3.—Emigration Statistics

Emigration from Canada is an important factor tending to offset to some extent present and past immigration activities. The major outward movement has always, of course, been to the United States and that movement, both of native-born Canadians and of Europeans who originally migrated to Canada, has attained considerable proportions at certain periods. No Canadian statistics on emigration are available but Table 11 gives figures taken from the annual reports of the Immigration and Naturalization Service of the United States Department of Justice. These figures show the numbers of persons entering the United States from Canada during the years 1949-58 with the expressed intention of establishing permanent residence in that country. They do not include persons travelling for pleasure, even for extended periods of time, holders of border-crossing cards (normally issued to persons living in border areas of Canada but working in the United States) or casual tourist crossings in these same areas.

Of the 45,143 persons entering the United States from Canada in the year ended June 30, 1958, 30,055 were native-born Canadians—13,403 males and 16,652 females. Only about one-quarter, or 7,678 of the total native-born emigrants were males in the productive age group 20-59 years. By occupation, the largest group of the total of 30,055 native-born persons was the professional or technical group which numbered 3,564; clerical or kindred workers numbered 3,435, and 1,950 were classed as craftsmen or

foremen. On the other hand, 16,124 persons or nearly 54 p.c. of the total were classed as housewives, children and others with no occupation. Altogether, 38 p.c. of the total were children under 20 years of age.

11.—Persons Entering the United States from Canada, Years Ended June 30, 1949-58

NOTE.—Includes only persons who have declared their intention of remaining permanently in the United States when applying for a visa (see text above).

SOURCE: Immigration and Naturalization Service, United States Department of Justice.

Year	Canadian-Born	Total from Canada	Year	Canadian-Born	Total from Canada
	No.	No.		No.	No.
1949.....	20,798	24,516	1954.....	27,055	34,873
1950.....	18,043	21,885	1955.....	23,091	32,435
1951.....	20,809	25,880	1956.....	29,533	42,363
1952.....	28,141	33,354	1957.....	33,203	46,354
1953.....	28,967	36,283	1958.....	30,055	45,143

PART II.—CANADIAN CITIZENSHIP*

Naturalization procedures and events leading to the passing of the Canadian Citizenship Act are given in the 1951 Year Book, pp. 153-155.

Section 1.—The Canadian Citizenship Act

The Canadian Citizenship Act came into force on Jan. 1, 1947, its purpose being to give a clear definition of Canadian citizenship and provide an underlying community of status for all the people of Canada. Since Jan. 18, 1950, the administration of Canadian citizenship has been the responsibility of the Department of Citizenship and Immigration. The provisions of the Act and its several amendments are outlined in some detail in the 1955 Year Book, pp. 177-181. More briefly, they are given in the following paragraphs.

Natural-Born Canadian Citizens, Born before Jan. 1, 1947.—The Act defines the two categories of a natural-born Canadian citizen as (1) a person born in Canada or on a Canadian ship or aircraft; (2) a person born outside of Canada before Jan. 1, 1947, if the responsible parent (the father or, where the father is deceased or where the child is born out of wedlock, the mother) is a Canadian citizen, if he was, on Jan. 1, 1947, either a minor or had, prior to that date, been lawfully admitted to Canada for permanent residence and had not, before that date, acquired the citizenship or nationality of another country.

The Act provides that a person in the second category will cease to be a Canadian citizen on attaining the age of 24 years or on Jan. 1, 1954, whichever is the later date, unless he has his place of domicile in Canada at such date or has, before such date and after reaching the age of 21 years, filed a declaration of retention of Canadian citizenship.

Natural-Born Canadian Citizens, Born after Dec. 31, 1946.—A person born outside of Canada subsequent to that date, whose responsible parent is considered a Canadian citizen pursuant to the terms of the Canadian Citizenship Act, is a Canadian if his birth is registered with the Registrar of Canadian Citizenship within two years of its occurrence or within such extended period as the Minister may authorize in special cases.

* Prepared in the Citizenship Registration Branch under the direction of the Deputy Minister, Department of Citizenship and Immigration, Ottawa.

The person who becomes a Canadian citizen in such manner automatically ceases to be a Canadian citizen on reaching the age of 24 years unless he complies with the requirements as set out for a person born outside of Canada before Jan. 1, 1947, who was still a minor on that date.

Canadian Citizens other than Natural Born.—Before the 1953 amendments to the Citizenship Act, the only persons who acquired Canadian citizenship on Jan. 1, 1947 through the transitional clauses of Sect. 9 were persons who were naturalized in Canada before that date, British subjects who had Canadian domicile at the commencement of the Act and women lawfully admitted to Canada and married prior to Jan. 1, 1947 whose husbands would have qualified as Canadian citizens if the Act had come into force before the date of marriage. Sect. 9 was amended on June 1, 1953, so that a British subject who had his place of domicile in Canada for at least 20 years immediately before Jan. 1, 1947 need not comply with the requirements of Canadian domicile provided he was not under an order of deportation on Jan. 1, 1947.

Status of Married Women.—Since the commencement of the Canadian Citizenship Act, a Canadian woman does not lose Canadian citizenship upon marriage to a non-Canadian and a non-Canadian woman does not become a Canadian citizen upon marriage to a Canadian citizen. However, a Canadian woman who marries a non-Canadian whose country of allegiance considers her to have acquired its nationality upon marriage may file a Declaration of Renunciation of Canadian citizenship if she wishes to divest herself of her Canadian citizenship. A non-Canadian woman who marries a Canadian citizen must apply to the court for a certificate of citizenship. If she is a citizen of another Commonwealth country she may apply direct to the Minister. The one concession as to the qualifications applicable in both instances is a residence of only one year in Canada rather than the prescribed five years of Canadian domicile.

A Canadian woman who married a non-Canadian prior to Jan. 1, 1947, and ceased to be a British subject may regain her status and be readmitted to Canadian citizenship upon application therefor, whether or not she is a resident of Canada.

Status of Minor Children.—The minor child of a Canadian citizen other than a natural-born Canadian may receive a certificate of Canadian citizenship upon application therefor by his or her responsible parent, the *de facto* guardian, or the mother if she has custody of the child. Provision is also made in the Citizenship Act for the granting of a certificate of citizenship to a minor child in special circumstances, e.g., to a child whose responsible parent is not a Canadian citizen but who has been admitted to Canada for permanent residence. Provision is made for the granting of a certificate to a person who has been adopted or legitimated and who has been admitted to Canada for permanent residence, if the adopter or the legally recognized father is a Canadian citizen.

Loss of Canadian Citizenship.—Canadian citizenship may be lost as follows:—

- (1) A Canadian citizen who when outside of Canada and not under disability (minor, lunatic or idiot) acquires by a voluntary and formal act other than marriage the nationality or citizenship of a country other than Canada. This does not apply if that country is at war with Canada at the time of acquisition but in such a case the Minister may order that he cease to be a Canadian citizen. The purpose of this is to hold the person, if deemed necessary, to his obligations as a Canadian.
- (2) A Canadian citizen who under the law of another country is a national or citizen of such country and who serves in the armed forces of such country when it is at war with Canada. This does not apply if the Canadian citizen became a national or citizen of such country when it was at war with Canada.
- (3) A Canadian citizen, other than natural born or one who has served in the Armed Forces of Canada in time of war, or other related circumstances, who resides outside of Canada for ten consecutive years without maintaining substantial connection with Canada, loses his citizenship automatically, but the period of absence may upon application be extended beyond the ten years for good and sufficient cause.

Loss of Citizenship by Revocation—Applicable Only to Naturalized Persons.—The citizenship of a Canadian citizen other than a natural-born Canadian citizen may be revoked by the Governor in Council if, upon a report from the Minister, he is satisfied that such Canadian citizen, having been charged with the offence of treason under the Criminal Code or with an offence under the Official Secrets Act, has failed or refused to return to Canada voluntarily within such time as may be prescribed in a notice sent by the Minister to such person at his last known address and has not appeared at the preliminary inquiry into such offence or at the trial of such offence, or both as the case may be; or has obtained a certificate of naturalization or of Canadian citizenship by false representation or fraud or by concealment of material circumstances.

Doubt as to Loss of Citizenship.—Where in the opinion of the Minister a doubt exists as to whether a person has ceased to be a Canadian citizen, the Minister may refer the question to the Commission referred to in Subsection (4) of Section 19 for a ruling and the decision of the Commission or the Court, as the case may be, shall be final.

Loss of Citizenship by Revocation—Applicable to Both Natural-Born and Naturalized Persons.—The Governor in Council may in his discretion order that any person shall cease to be a Canadian citizen if, upon a report from the Minister of Citizenship and Immigration, he is satisfied that such person has, when not under a disability (1) acquired voluntarily the citizenship of a foreign country (other than by marriage), (2) taken or made an oath, affirmation, or other declaration of allegiance to a foreign country, or (3) made a declaration renouncing his Canadian citizenship.

Section 2.—Canadian Citizenship Statistics

Data on countries of allegiance and origins of the population were not collected at the 1956 Census so that the latest information available is that for the 1951 Census. Results of that census show that 96.9 p.c. of the people of Canada were Canadian citizens; that 0.7 p.c. were citizens of other Commonwealth countries; 1.7 p.c. of European countries; 0.1 p.c. of Asiatic countries; 0.5 p.c. of the United States; and 0.1 p.c. of other countries. Table 1, classifying the 1951 population by country of allegiance and origin, shows that 98.0 p.c. of the persons of British Isles origins and 99.7 p.c. of those of French origin owed allegiance to Canada. Corresponding percentages for other European and Asiatic origins were 89.3 p.c. and 78.7 p.c., respectively.

1.—Population by Country of Allegiance and Origin, 1951

Origin	Country of Allegiance					Total
	Canada	Other Commonwealth Countries	United States	European Countries	Other Countries ¹	
	No.	No.	No.	No.	No.	No.
British Isles ²	6,577,849	95,567	34,229	1,524	516	6,709,685
French.....	4,304,972	763	8,370	4,896	166	4,319,167
Other European.....	2,279,704	6,609	22,025	229,311	16,073	2,553,722
German.....	586,597	631	8,203	21,739	2,825	619,995
Italian.....	126,767	1,640	878	22,712	248	152,245
Jewish.....	161,968	1,475	2,811	12,305	3,111	181,670
Netherlands.....	227,552	312	2,327	33,032	1,044	264,267
Polish.....	179,960	661	845	36,890	1,489	219,845
Russian.....	83,643	181	459	6,451	545	91,279
Scandinavian ³	268,904	311	4,218	9,426	165	283,024
Ukrainian.....	366,160	225	305	25,069	3,234	395,043
Other.....	278,153	1,173	1,979	61,687	3,362	346,354
Asiatic.....	57,325	417	220	104	14,761	72,827
Native Indian and Eskimo.....	165,359	45	169	17	17	165,607
Other and not stated.....	182,730	670	3,987	638	396	188,421
Totals, All Origins.....	13,567,939	104,071	69,000	236,490	31,929	14,009,429

¹ Includes persons reported as "stateless".

² Includes English, Irish, Scottish, Welsh and Manx.

³ Includes Danish, Icelandic, Norwegian and Swedish.

Citizenship Certificates Issued.—In 1958, 133,560 Canadian Citizenship Certificates were issued as compared with 141,915 in 1957. During 1958, the Canadian Citizenship Registration Branch recorded 5,321 certificates of registration of births abroad, 629 declarations of intention, 120 declarations of retention of Canadian citizenship and 18 petitions for resumption of Canadian citizenship. Certificates issued free to persons who had had active military service numbered 425. Corresponding figures for 1957 were 4,422 registrations of births abroad, 751 declarations of intention, 152 declarations of retention, 11 petitions for resumption and 691 certificates issued free to persons who had had active military service.

2.—Citizenship Certificates Issued, by Status of Recipient, 1956-58

Section of 1947 Act	Classification	1956	1957	1958
		No.	No.	No.
Sect. 34 (1) (i)	Certificates of Proof of Status—			
	Canadian citizens by birth.....	1,206	1,258	1,318
	By naturalization under former Acts.....	2,147	2,515	3,118
	British subjects with 5 years domicile before Jan. 1, 1947.....	1,243	1,312	1,527
	Women, through marriage.....	437	466	673
Sect. 10 (2)	British subjects with 5 years domicile after Jan. 1, 1947.....	5,023	7,266	8,501
Sect. 10 (1)	Aliens.....	42,028	73,571	58,905
Sect. 10 (5)	Minors whose parents have been granted Certificates.....	7,762	13,912	15,716
Sect. 11 (3)	Minors under special circumstances.....	101	85	165
Sect. 10 (3)	Women who regained lost Canadian citizenship through marriage.....	296	321	432
Sect. 10 (4)	Canadians who regained lost status by naturalization outside Canada.....	104	137	152
Sect. 11 (1)	Doubtful cases who now have been awarded Certificates.....	8	8	5
Sect. 11 (2)	Adopted and legitimated persons.....	88	170	312
	Replacement Certificates.....	1,078	1,312	1,563
	Miniature certificates of citizenship (issued since Oct. 18, 1955, to Canadian citizens).....	18,450	39,582	41,173
	Totals.....	79,971	141,915	133,560

Characteristics of Persons Granted Citizenship Certificates in 1958.—Comparable detailed statistics showing the characteristics of persons granted citizenship certificates are available since 1953; such characteristics include age, marital status, occupation, period of immigration, residence and previous nationality.

Of the 84,183 persons granted citizenship in 1958 about 2 p.c. had immigrated to Canada before 1921, 4 p.c. in the period 1921-40, 21 p.c. in the period 1941-50 and 73 p.c. since 1950. Regionally these new citizens were distributed as follows: 1 p.c. in the Atlantic Provinces, 16 p.c. in Quebec, 55 p.c. in Ontario, 16 p.c. in the Prairie Provinces and 11 p.c. in British Columbia. Just over 82 p.c. of them resided in urban centres.

Just over 16 p.c. of the persons naturalized during 1958 had been citizens of Germany, 13 p.c. had been citizens of Italy, 13 p.c. had been citizens of the Netherlands, 12 p.c. had owed allegiance to a British Commonwealth country, 11 p.c. reported former allegiance to countries now parts of the U.S.S.R., and Poland was country of allegiance for almost 10 p.c. Most of the persons designated as "stateless" were born in Poland, the U.S.S.R., Yugoslavia, Hungary, Germany, Czechoslovakia and Austria.

Of the males granted citizenship certificates in 1958, 28 p.c. were employed in manufacturing and mechanical occupations, 14 p.c. were employed in construction, 12 p.c. were labourers in other than primary industries, 11 p.c. were in service, 9 p.c. were in professional occupations, 7 p.c. in agriculture, 4 p.c. in transportation and communication and 4 p.c. in proprietary and managerial occupations. Of the females granted certificates, 56 p.c. were homemakers; among those employed outside the home, 28 p.c. were in manufacturing and mechanical occupations, 28 p.c. in clerical occupations and 25 p.c. in service occupations.

3.—Persons Granted Citizenship Certificates in 1958, by Province of Residence and by Period of Immigration to Canada

Residence	Period of Immigration					Born in Canada ¹	Total
	Before 1921	1921-1930	1931-1940	1941-1950	1951-1958		
	No.	No.	No.	No.	No.	No.	No.
Residing in Canada.....	1,556	2,635	868	17,429	61,307	229	84,024
Newfoundland.....	—	2	—	13	116	—	131
Prince Edward Island.....	—	1	—	18	58	1	78
Nova Scotia.....	15	13	14	143	401	1	587
New Brunswick.....	6	7	6	53	177	—	249
Quebec.....	174	276	81	2,119	10,745	29	13,424
Ontario.....	274	661	281	9,644	35,475	57	46,392
Manitoba.....	106	196	61	1,150	1,835	27	3,375
Saskatchewan.....	103	172	39	427	944	13	1,698
Alberta.....	570	1,005	312	1,925	4,483	76	8,371
British Columbia.....	304	289	73	1,898	6,894	25	9,483
Yukon and N.W.T.....	4	13	1	39	179	—	236
Residing outside Canada.....	—	1	4	44	94	16	159
Totals, Naturalized.....	1,556	2,636	872	17,473	61,401	245	84,183

¹ Canadian-born persons who lost their citizenship by marriage; this applies to females only.

4.—Persons Granted Citizenship Certificates in 1957 and 1958, by Age Group and Sex

Age Group	1957			1958		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
0 - 4 years.....	40	32	72	50	52	102
5 - 9 ".....	2,297	2,222	4,519	2,149	1,925	4,074
10 - 14 ".....	2,547	2,355	4,902	3,413	3,038	6,451
15 - 19 ".....	2,083	1,857	3,940	2,556	2,068	4,624
20 - 24 ".....	3,940	2,328	6,268	3,770	2,692	6,462
25 - 29 ".....	9,624	4,393	14,017	6,909	4,015	10,924
30 - 34 ".....	11,658	6,857	18,515	8,380	6,094	14,474
35 - 39 ".....	8,452	4,819	13,271	6,905	4,738	11,643
40 - 44 ".....	6,443	3,507	9,950	4,533	2,996	7,529
45 - 49 ".....	5,149	2,982	8,131	3,771	2,625	6,396
50 - 54 ".....	3,003	2,160	5,163	2,533	2,043	4,576
55 - 59 ".....	1,789	1,456	3,245	1,631	1,439	3,070
60 - 64 ".....	968	784	1,752	1,046	888	1,934
65 - 69 ".....	553	463	1,016	629	513	1,142
70 - 74 ".....	255	217	472	295	227	522
75+ ".....	134	95	229	148	112	260
Totals, All Ages.....	58,935	36,527	95,462	48,718	35,465	84,183

5.—Persons Granted Citizenship Certificates in 1957 and 1958, by Occupation and Sex

Occupation	1957			1958		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
Proprietary and managerial.....	2,594	291	2,885	1,637	137	1,774
Professional.....	4,948	1,075	6,023	3,575	924	4,499
Clerical.....	1,827	2,549	4,376	1,397	2,348	3,745
Transportation and communication.....	2,171	40	2,211	1,753	49	1,802
Commercial and financial.....	1,751	426	2,177	1,373	265	1,638
Service.....	4,480	2,328	6,808	4,204	2,112	6,316
Agricultural.....	2,534	44	2,578	2,838	52	2,890
Fishing, trapping, logging.....	422	—	422	366	—	366
Mining.....	1,312	2	1,314	915	—	915
Manufacturing and mechanical.....	15,187	3,020	18,207	11,138	2,384	13,522
Construction.....	6,784	12	6,796	5,493	27	5,520
Labourers, not in primary industries.....	6,417	37	6,454	4,953	19	4,972
Homemakers.....	—	19,824	19,824	—	20,037	20,037
No occupation (including students, retired, etc.)..	939	225	1,164	2,150	1,197	3,347
Children under 14 years of age.....	4,499	4,250	8,749	5,111	4,576	9,687
Not stated ¹	3,070	2,404	5,474	1,815	1,338	3,153
Totals, All Occupations.....	58,935	36,527	95,462	48,718	35,465	84,183

¹ Mainly children over 14 years of age.

6.—Persons Granted Citizenship Certificates in 1957 and 1958, by Country of Birth and Sex

Country of Birth	1957			1958		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
Albania.....	32	5	37	24	1	25
Algeria.....	8	2	10	9	6	15
Argentina.....	22	8	30	22	15	37
Australia.....	32	22	54	63	38	101
Austria.....	1,539	1,059	2,598	1,131	1,001	2,132
Belgium.....	755	649	1,404	612	508	1,120
Brazil.....	19	10	29	15	18	33
British Guiana.....	25	30	55	53	48	101
Bulgaria.....	154	40	194	87	15	102
Burma.....	11	9	20	9	2	11
Canada.....	52	311	363	62	360	422
China.....	1,601	768	2,369	1,400	774	2,174
Cuba.....	4	5	9	3	5	8
Cyprus.....	20	6	26	7	5	12
Czechoslovakia.....	1,853	1,039	2,892	1,017	763	1,780
Danzig.....	25	17	42	28	21	49
Denmark.....	889	439	1,328	801	416	1,217
Egypt.....	76	40	116	69	52	121
Finland.....	606	493	1,099	527	503	1,030
France.....	1,075	632	1,707	929	587	1,516
Germany.....	6,630	4,764	11,394	6,146	5,282	11,428
Greece.....	1,179	550	1,729	779	490	1,269
Hong Kong.....	9	17	26	27	27	54
Hungary.....	2,151	1,348	3,499	1,052	783	1,835
Iceland.....	9	7	16	6	7	13
India.....	150	91	241	163	102	265
Indonesia.....	68	43	111	44	28	72
Iran.....	10	9	19	15	6	21
Iraq.....	33	24	57	28	18	46
Ireland, Republic of.....	229	119	348	393	212	605
Israel.....	119	128	247	155	149	304
Italy.....	10,696	3,359	14,055	7,431	3,691	11,122
Japan.....	53	77	130	51	83	134
Lebanon.....	113	63	176	78	52	130
Luxembourg.....	16	11	27	24	16	40
Malta.....	64	14	78	89	19	108
Mexico.....	9	7	16	12	20	32
Netherlands.....	4,833	3,614	8,447	6,153	4,707	10,860

6.—Persons Granted Citizenship Certificates in 1957 and 1958, by Country of Birth and Sex —concluded

Country of Birth	1957			1958		
	Males	Females	Total	Males	Females	Total
	No.	No.	No.	No.	No.	No.
Netherlands East Indies.....	12	11	23	40	27	67
New Zealand.....	10	3	13	30	11	41
Norway.....	266	138	404	308	169	477
Palestine.....	25	16	41	19	26	45
Paraguay.....	11	4	15	8	5	13
Poland.....	6,610	4,295	10,905	4,980	3,663	8,643
Portugal.....	18	8	26	46	6	52
Romania.....	1,343	995	2,338	928	781	1,709
South Africa.....	27	21	48	45	30	75
Spain.....	145	58	203	89	46	135
Sweden.....	226	181	407	211	138	349
Switzerland.....	450	206	656	414	204	618
Syria.....	12	13	25	14	13	27
Tunisia.....	15	2	17	8	5	13
Turkey.....	83	39	122	40	39	79
Union of Soviet Socialist Republics.....	7,656	5,830	13,486	5,113	4,205	9,318
United Kingdom.....	3,824	3,030	6,854	4,354	3,486	7,840
United States.....	491	240	731	726	427	1,153
Venezuela.....	4	7	11	7	8	15
West Indies.....	125	106	231	179	118	297
Yugoslavia.....	2,328	1,409	3,737	1,502	1,118	2,620
Other.....	85	86	171	143	110	253
Totals, All Countries.....	58,935	36,527	95,462	48,718	35,465	84,183
Commonwealth.....	4,368	3,678	8,046	5,129	4,282	9,411
Other Europe.....	51,714	31,266	82,980	40,733	29,333	70,066
Other Asia.....	2,151	1,212	3,363	1,905	1,229	3,134
United States.....	491	240	731	726	427	1,153
Other.....	211	131	342	225	194	419

7.—Persons Granted Citizenship Certificates in 1957 and 1958, by Country of Former Allegiance

NOTE.—Where country of former allegiance was not stated or the person indicated as "stateless", the country of birth was assigned as country of former allegiance.

Country of Former Allegiance	1957	1958	Country of Former Allegiance	1957	1958	Country of Former Allegiance	1957	1958
	No.	No.		No.	No.		No.	No.
British countries..	8,654	10,235	Hungary.....	3,598	1,651	Poland.....	11,187	8,002
Albania.....	34	26	Iceland.....	16	11	Portugal.....	40	62
Argentina.....	11	22	Iran.....	22	19	Romania.....	1,971	977
Austria.....	2,381	1,941	Iraq.....	52	37	Romania.....	210	135
Belgium.....	1,114	924	Ireland.....			Sweden.....	267	237
Brazil.....	11	20	Republic of.....	11	27	Switzerland.....	658	638
Bulgaria.....	186	96	Israel.....	260	1,314	Syria.....	29	22
China.....	2,218	2,658	Italy.....	14,143	11,217	Turkey.....	37	30
Czechoslovakia.....	2,589	1,327	Japan.....	121	127	United States.....	907	1,356
Danzig.....	10	4	Latvia.....	2,326	1,482	Union of Soviet Socialist Republics..	6,638	5,076
Denmark.....	1,356	1,237	Lebanon.....	174	139	Yugoslavia.....	3,425	2,199
Egypt.....	33	51	Lithuania.....	1,634	954	Other.....	162	86
Estonia.....	2,441	1,435	Luxembourg.....	18	34			
Finland.....	1,095	1,035	Mexico.....	12	16			
France.....	1,573	1,441	Netherlands.....	8,655	11,102			
Germany.....	12,962	13,556	Norway.....	411	496			
Greece.....	1,806	1,318	Palestine.....	4	11			
						Totals, All Countries.....	95,462	84,183

CHAPTER V.—VITAL STATISTICS*

CONSPECTUS

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NOTE.—*The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.*

Vital statistics provide a record of population development—a measure of the pace of growth, marriage and fertility trends, the distribution of people in and entering the various age groups, the relative importance of each of the causes of death, and so on. The continuity of such data gives a constant guide to the planning, operation and evaluation of a variety of national activities, particularly in the fields of public health, education, community planning and various types of business enterprise.

This Chapter gives a fairly detailed coverage of the vital statistics information available, gives life tables for males and females and presents a comparison of the principal Canadian vital statistics rates with those of other countries. In making international and interprovincial comparisons of birth, death and marriage rates, it is important to note that part of the differences observed over a period of years as between countries, provinces or local areas may be caused by differences in the sex and age distribution of the populations involved. Similarly, rates for any one area may be affected by changes in such distribution.

The population data upon which the rates shown in this Chapter are computed are given in Chapter III, in DBS census bulletins, and in reports on intercensal estimates of population. Births and deaths are classified by place of residence (births according to the residence of the mother) and marriages by place of occurrence.

The history of the collection of vital statistics in Canada is covered in the 1948-49 Year Book, pp. 185-188. Detailed information is given in *Vital Statistics* (Preliminary Report) (Catalogue No. 84-201), *Vital Statistics of Canada* (Catalogue No. 84-202) and in other regular and special reports; in addition, certain unpublished data are available on request.

Section 1.—Summary of Vital Statistics

Table 1 gives a summary of the principal vital statistics of the provinces of Canada from 1931 to 1958 and Table 2 shows certain vital statistics for urban centres having at least 10,000 population at the date of the 1956 Census. Corresponding data for 1921—when the collection of national statistics was initiated—to 1930 are shown in previous issues of the Canada Year Book.

* Revised in the Vital Statistics Section, Health and Welfare Division, Dominion Bureau of Statistics.

1.—Summary of Principal Vital Statistics, by Province, 1931-58

NOTE.—Figures for the years 1921, when the collection of national statistics was initiated, to 1930 are given in previous editions of the Year Book.

Province and Year	Live Births		Deaths		Natural Increase ¹		Infant Mortality ²		Maternal Mortality		Marriages	
	No.	Rate ³	No.	Rate ³	No.	Rate ³	No.	Rate ⁴	No.	Rate ⁴	No.	Rate ⁴
Newfoundland—												
Av. 1931-35.....	6,686	23.4	3,642	12.8	3,044	10.6	782	117	34	5.0	1,708	6.0
" 1936-40.....	7,638	25.8	3,681	12.4	3,957	13.4	754	99	40	5.3	2,208	7.5
" 1941-45.....	9,292	29.8	3,681	11.8	5,611	18.0	852	92	39	4.2	2,967	9.5
" 1946-50.....	12,352	36.2	3,179	9.3	9,173	26.9	754	61	25	2.0	2,711	8.0
" 1951-55.....	13,101	34.1	2,926	7.6	10,175	26.5	598	46	24	1.8	2,836	7.4
1956.....	14,541	35.0	3,058	7.4	11,483	27.6	630	43	23	1.6	3,073	7.4
1957.....	15,315	36.0	3,198	7.5	12,117	28.5	604	39	20	1.3	3,041	7.1
1958.....	14,815	33.8	3,122	7.1	11,693	26.7	572	39	14	0.9	3,047	7.0
P. E. Island—												
Av. 1931-35.....	1,961	21.8	1,001	11.1	960	10.7	131	67	10	5.1	496	5.5
" 1936-40.....	2,054	21.9	1,080	11.5	974	10.4	142	69	10	4.9	623	6.6
" 1941-45.....	2,180	23.7	964	10.5	1,216	13.2	114	52	9	3.9	686	7.5
" 1946-50.....	2,869	30.5	922	9.8	1,947	20.7	114	40	4	1.3	677	7.2
" 1951-55.....	2,720	27.2	923	9.2	1,797	18.0	88	32	2	0.8	623	6.2
1956.....	2,657	26.8	933	9.4	1,724	17.4	105	40	1	0.4	649	6.6
1957.....	2,676	27.0	916	9.3	1,760	17.7	75	28	2	0.7	627	6.3
1958.....	2,581	25.8	949	9.5	1,632	16.3	84	33	1	0.4	619	6.2
Nova Scotia—												
Av. 1931-35.....	11,486	21.9	6,073	11.6	5,414	10.3	840	73	59	5.1	3,522	6.7
" 1936-40.....	12,060	21.7	6,126	11.0	5,934	10.7	782	65	48	4.0	4,796	8.6
" 1941-45.....	15,146	25.2	6,326	10.5	8,820	14.7	870	57	41	2.7	6,302	10.5
" 1946-50.....	17,994	28.9	6,042	9.7	11,952	19.2	760	42	22	1.2	5,525	8.9
" 1951-55.....	18,246	27.5	5,802	8.8	12,444	18.7	586	32	13	0.7	5,283	8.0
1956.....	19,106	27.5	5,738	8.3	13,368	19.2	554	29	6	0.3	5,543	8.0
1957.....	19,316	27.5	5,977	8.5	13,339	19.0	526	27	13	0.7	5,206	7.4
1958.....	18,898	26.6	6,120	8.6	12,778	18.0	557	29	14	0.7	5,135	7.2
New Brunswick—												
Av. 1931-35.....	10,440	24.9	4,710	11.3	5,730	13.6	857	82	57	5.5	2,737	6.5
" 1936-40.....	11,105	25.1	5,040	11.4	6,065	13.7	913	82	54	4.9	3,801	8.6
" 1941-45.....	13,873	28.2	5,050	10.9	7,987	17.3	960	74	42	3.4	4,433	9.6
" 1946-50.....	16,378	34.0	4,886	9.8	11,992	24.2	1,015	60	23	1.4	4,864	9.8
" 1951-55.....	16,496	31.0	4,576	8.6	11,920	22.4	717	43	16	0.9	4,306	8.1
1956.....	16,573	29.9	4,658	8.4	11,915	21.5	656	40	9	0.5	4,591	8.3
1957.....	17,020	30.1	4,595	8.1	12,425	22.0	589	35	5	0.3	4,284	7.6
1958.....	16,414	28.4	4,528	7.8	11,886	20.6	568	35	8	0.5	4,170	7.2
Quebec—												
Av. 1931-35.....	78,888	26.6	32,796	11.0	46,092	15.6	7,757	98	405	5.1	17,089	5.8
" 1936-40.....	78,509	24.6	33,221	10.4	45,288	14.2	6,470	82	400	5.1	27,111	8.5
" 1941-45.....	97,906	28.4	34,273	9.9	63,633	18.5	6,690	68	318	3.2	33,126	9.6
" 1946-50.....	115,496	30.4	33,723	8.9	81,773	21.5	6,205	54	227	2.0	34,874	9.2
" 1951-55.....	128,523	30.0	34,269	8.0	94,254	22.0	5,662	44	149	1.2	35,584	8.3
1956.....	135,884	29.4	35,042	7.6	100,842	21.8	5,544	41	125	0.9	37,290	8.1
1957.....	141,707	29.8	36,234	7.6	105,473	22.2	5,412	38	115	0.8	37,135	7.8
1958.....	141,396	29.0	35,774	7.3	105,622	21.7	5,152	36	95	0.7	36,229	7.4
Ontario—												
Av. 1931-35.....	65,000	18.5	35,782	10.2	29,218	8.3	3,962	61	344	5.3	24,260	6.9
" 1936-40.....	64,461	17.5	37,794	10.3	26,668	7.2	3,196	50	291	4.5	32,719	8.9
" 1941-45.....	77,738	19.9	39,738	10.2	38,000	9.7	3,276	42	197	2.5	38,042	9.7
" 1946-50.....	105,161	24.6	42,214	9.9	62,947	14.7	3,795	36	129	1.2	44,084	10.3
" 1951-55.....	128,861	26.1	44,715	9.0	84,146	17.1	3,634	28	83	0.6	45,213	9.1
1956.....	143,516	26.6	47,231	8.7	96,285	17.9	3,610	25	70	0.5	46,282	8.6
1957.....	150,920	26.8	49,164	8.7	101,756	18.1	3,776	25	55	0.4	46,780	8.3
1958.....	152,637	26.3	48,677	8.4	103,960	17.9	3,801	25	70	0.5	46,894	8.1
Manitoba—												
Av. 1931-35.....	13,690	19.4	5,413	7.7	8,277	11.7	835	61	60	4.4	5,015	7.1
" 1936-40.....	13,515	18.8	6,136	8.5	7,379	10.3	773	57	54	4.0	6,931	9.6
" 1941-45.....	15,831	21.8	6,633	9.1	9,198	12.7	814	51	41	2.6	7,295	10.0
" 1946-50.....	19,325	25.9	6,702	9.0	12,623	16.9	810	42	24	1.3	7,605	10.2
" 1951-55.....	21,321	26.4	6,775	8.4	14,546	18.0	675	32	15	0.7	7,104	8.8
1956.....	21,945	25.8	7,058	8.3	14,887	17.5	676	31	6	0.3	6,709	7.9
1957.....	22,362	26.0	7,368	8.6	14,994	17.4	711	32	10	0.4	6,594	7.7
1958.....	21,697	24.9	7,145	8.2	14,552	16.7	656	30	12	0.6	6,430	7.4

¹ Excess of births over deaths.
1,000 live births.

² Deaths under one year of age.

³ Per 1,000 population.

⁴ Per

1.—Summary of Principal Vital Statistics, by Province, 1931-58—concluded

Province or Territory and Year	Live Births		Deaths		Natural Increase ¹		Infant Mortality ²		Maternal Mortality		Marriages	
	No.	Rate ³	No.	Rate ³	No.	Rate ³	No.	Rate ⁴	No.	Rate ⁴	No.	Rate ³
Saskatchewan—												
Av. 1931-35.....	20,325	21.9	6,037	6.5	14,288	15.4	1,260	62	91	4.5	5,680	6.1
" 1936-40.....	18,675	20.4	6,366	7.0	12,310	13.4	1,025	55	68	3.6	6,599	7.2
" 1941-45.....	18,444	21.7	6,437	7.6	12,007	14.1	858	47	52	2.8	6,541	7.7
" 1946-50.....	21,907	26.3	6,473	7.8	15,434	18.5	883	40	29	1.3	7,413	8.9
" 1951-55.....	23,554	27.5	6,547	7.6	17,007	19.9	743	32	16	0.7	6,876	8.0
1956.....	24,059	27.3	6,666	7.6	17,393	19.7	680	28	8	0.3	6,403	7.3
1957.....	23,921	27.2	6,743	7.7	17,178	19.5	609	25	5	0.2	6,510	7.4
1958.....	23,843	26.9	6,483	7.3	17,360	19.6	616	26	13	0.5	6,464	7.3
Alberta—												
Av. 1931-35.....	16,557	22.1	5,447	7.3	11,110	14.8	997	60	75	4.5	5,530	7.4
" 1936-40.....	16,282	20.8	6,054	7.7	10,228	13.1	869	53	73	4.5	7,192	9.2
" 1941-45.....	18,845	23.7	6,355	8.0	12,490	15.7	827	44	46	2.4	7,977	10.0
" 1946-50.....	24,290	28.4	6,814	8.0	17,476	20.4	889	37	25	1.0	9,090	10.6
" 1951-55.....	31,087	30.6	7,527	7.4	23,560	23.2	894	29	15	0.5	9,750	9.6
1956.....	34,951	31.1	7,788	6.9	27,165	24.2	860	25	14	0.4	9,965	8.9
1957.....	35,713	30.8	8,255	7.1	27,463	23.7	963	27	12	0.3	10,117	8.7
1958.....	36,842	30.7	8,237	6.9	28,605	23.8	932	25	17	0.5	10,186	8.5
British Columbia—												
Av. 1931-35.....	10,005	14.0	6,344	8.9	3,661	5.1	463	46	53	5.3	4,267	6.0
" 1936-40.....	12,106	15.6	7,697	9.9	4,408	5.7	532	44	46	3.8	7,053	9.1
" 1941-45.....	17,705	19.8	9,368	10.5	8,337	9.3	684	39	46	2.6	9,535	10.7
" 1946-50.....	25,859	24.0	10,992	10.2	14,867	13.9	868	34	31	1.2	11,564	10.7
" 1951-55.....	31,347	25.1	12,233	9.8	19,114	15.3	856	27	17	0.5	11,131	8.9
1956.....	36,241	25.9	13,415	9.6	22,826	16.3	944	26	13	0.4	11,950	8.5
1957.....	38,744	26.1	13,711	9.2	25,033	16.9	1,096	28	15	0.4	12,620	8.5
1958.....	39,577	25.6	13,741	8.9	25,836	16.7	1,077	27	15	0.4	12,094	7.8
Yukon—												
Av. 1931-35.....	49	11.6	61	14.5	-12	-2.9	4	86	--	4.1	24	5.8
" 1936-40.....	69	13.8	73	14.6	-4	-0.8	7	102	1	8.7	36	7.2
" 1941-45.....	105	21.0	96	19.3	9	1.7	11	101	1	5.7	60	12.1
" 1946-50.....	254	31.7	91	11.4	163	20.3	16	63	--	1.6	73	9.1
" 1951-55.....	413	43.0	90	9.4	323	33.6	22	53	--	0.5	94	9.8
1956.....	481	40.1	85	7.1	396	33.0	23	48	—	—	112	9.3
1957.....	494	41.2	93	7.8	401	33.4	27	55	1	2.0	110	9.2
1958.....	473	36.4	92	7.1	381	29.3	20	42	—	—	109	8.4
Northwest Territories—												
Av. 1931-35.....	190	19.0	137	13.7	53	5.3	21	110	1	4.2	41	4.1
" 1936-40.....	228	20.0	177	15.5	51	4.5	29	125	2	10.5	72	6.3
" 1941-45.....	383	31.9	332	27.7	51	4.2	72	189	2	4.7	95	7.9
" 1946-50.....	626	39.1	372	23.2	254	15.9	87	139	3	5.4	139	8.7
" 1951-55.....	666	40.1	284	17.1	382	23.0	78	117	2	3.6	115	6.9
1956.....	785	41.3	291	15.3	494	26.0	117	149	3	3.8	146	7.7
1957.....	900	47.4	325	17.1	575	30.3	129	143	2	2.2	162	8.5
1958.....	945	47.3	333	16.7	612	30.6	143	151	4	4.2	148	7.4
Canada—⁵												
Av. 1931-35.....	228,591	21.5	103,800	9.8	124,791	11.7	17,126	75	1,154	5.1	68,660	6.5
" 1936-40.....	229,064	20.5	109,764	9.8	119,300	10.7	14,737	64	1,046	4.6	96,931	8.7
" 1941-45.....	277,320	23.5	115,572	9.8	161,748	13.7	15,176	55	793	2.9	114,091	9.7
" 1946-50.....	355,748	27.4	120,438	9.3	235,310	18.1	15,723	44	527	1.5	126,898	9.8
" 1951-55.....	416,334	28.0	126,666	8.5	289,668	19.5	14,552	35	353	0.8	128,915	8.7
1956.....	450,739	28.0	131,961	8.2	318,778	19.8	14,399	32	278	0.6	132,713	8.3
1957.....	469,093	28.3	136,579	8.2	332,514	20.1	14,517	31	255	0.5	133,186	8.0
1958.....	470,118	27.6	135,201	7.9	334,917	19.7	14,178	30	263	0.6	131,525	7.7

¹ Excess of births over deaths.² Deaths under one year of age.³ Per 1,000 population.⁴ Per

1,000 live births.

⁵ Figures for Newfoundland are included from 1949 only.

2.—Summary of Principal Vital Statistics for Urban Centres of 10,000 Population or Over,¹ 1951-58

NOTE.—Urban centres are designated in this table by the following abbreviations: c.=city, t.=town, vl.=village, s.m.=suburban municipality, and d.m.=district municipality.

Province and Urban Centre	Live Births		Deaths		Natural Increase		Infant Mortality			Marriages ²	
	Av. 1951-55	1958	Av. 1951-55	1958	Av. 1951-55	1958	Av. 1951-55	1958		Av. 1951-55	1958
	No.	No.	No.	No.	No.	No.	Rate ³	No.	Rate ³	No.	No.
Newfoundland—											
Corner Brook, c.....	735	946	90	119	645	827	33	35	37	211	191
St. John's, c.....	1,878	1,898	507	508	1,371	1,390	40	54	28	692	724
Prince Edward Island—											
Charlottetown, c.....	477	436	206	201	271	235	30	15	34	176	153
Nova Scotia—											
Amherst, t.....	263	247	109	96	154	151	39	10	40	117	109
Dartmouth, t.....	633	914	103	154	530	760	18	27	30	188	188
Glace Bay, t.....	687	638	220	225	467	413	46	37	55	170	197
Halifax, c.....	2,482	2,475	725	744	1,757	1,731	24	69	28	1,183	1,070
New Waterford, t.....	369	343	87	100	282	243	50	9	26	95	78
Sydney, c.....	1,063	955	246	256	817	699	23	12	13	817	252
Truro, t.....	299	349	94	107	205	242	23	12	34	162	143*
New Brunswick—											
Edmundston, c.....	398	363	68	63	330	300	36	11	30	107	99
Fredericton, c.....	453	489	153	178	300	311	32	13	27	244	229
Lancaster, c.....	..	273	..	111	..	162	..	9	33	..	59
Moncton, c.....	775	1,023	218	268	557	755	29	18	18	360	327
Saint John, c.....	1,499	1,529	556	603	943	926	27	44	29	548	549
Quebec—											
Alma, t.....	391	499	58	62	333	437	50	18	36	92	119
Arvida, c.....	389	433	46	45	343	388	43	6	14	70	75
Cap de la Madeleine, c.....	680	731	127	146	553	585	34	17	23	166	186
Chicoutimi, c.....	1,041	1,020	197	170	844	850	54	54	53	241	214
Dorval, c.....	265	422	43	84	222	338	23	8	19	25	34
Drummondville, c.....	548	741	138	193	410	548	55	27	36	158	236
Granby, c.....	854	900	176	179	678	721	33	22	24	257	236
Grand Mère, c.....	406	419	83	104	323	315	38	9	21	108	81
Hull, c.....	1,586	1,697	413	382	1,173	1,315	60	77	45	460	431
Jacques Cartier, c.....	1,051	1,219	186	213	865	1,006	55	64	53	149	177
Joliette, c.....	470	506	164	167	306	339	40	11	22	170	178
Jonquière, c.....	943	1,009	148	140	795	869	46	33	33	187	188
Kénogami, t.....	402	424	59	53	343	371	35	15	35	87	99
Lachine, c.....	777	830	234	291	543	539	28	19	23	267	238
LaSalle, t.....	480	930	87	176	393	754	27	17	18	77	100
La Tuque, t.....	315	435	65	82	250	353	32	13	30	82	111
Lauson, c.....	263	232	79	80	184	152	56	9	39	76	77
Lévis, c.....	193	449	41	74	152	375	36	11	24	19	48
Laval des Rapides, t.....	338	319	118	110	220	209	57	13	41	96	81
Longueuil, c.....	391	501	106	105	285	396	40	10	20	108	110
Magog, c.....	404	324	101	98	303	226	36	15	46	105	102
Montreal, c.....	27,847	30,073	9,937	10,427	17,910	19,646	32	911	30	11,143	11,353
Montreal North, t.....	546	1,130	107	175	439	955	42	30	27	99	120
Mount Royal, t.....	237	288	73	89	164	199	19	6	21	82	185
Noranda, c.....	366	333	50	54	316	279	34	17	51	88	75
Outremont, c.....	302	312	275	274	27	38	24	5	16	395	300
Pointe aux Trembles, t.....	289	497	108	113	181	384	121	18	36	66	80
Pointe Claire, t.....	284	471	63	118	221	353	18	8	17	58	89
Quebec, c.....	4,316	4,371	1,630	1,567	2,686	2,804	62	161	37	1,756	1,674
Rimouski, t.....	448	496	82	106	366	390	50	21	42	98	102
Rouyn, c.....	595	659	100	102	495	557	48	24	36	104	155
Ste. Foy, c.....	304	769	38	92	266	677	27	12	16	26	65
St. Hyacinthe, c.....	543	493	248	218	295	275	32	20	41	212	206
St. Jean, c.....	671	792	168	151	503	641	38	24	30	202	197
St. Jérôme, c.....	596	678	134	150	462	528	49	18	27	199	199
St. Lambert, c.....	219	274	82	89	187	185	27	4	15	59	67
St. Laurent, c.....	886	1,162	163	211	723	951	23	18	15	151	215
St. Michel, c.....	553	1,446	76	155	477	1,291	27	42	29	74	131
Shawinigan Falls, c.....	866	912	179	196	687	716	37	43	47	242	206
Shawinigan South, vl.....	311	372	40	41	271	331	32	10	27	62	55

¹ As at the 1956 Census; residents only.² By place of occurrence.³ Per 1,000 live births.

2.—Summary of Principal Vital Statistics for Urban Centres of 10,000 Population or Over,¹ 1951-53—continued

Province and Urban Centre	Live Births		Deaths		Natural Increase		Infant Mortality			Marriages ²	
	Av. 1951-55	1958	Av. 1951-55	1958	Av. 1951-55	1958	Av. 1951-55	1958		Av. 1951-55	1958
	No.	No.	No.	No.	No.	No.	Rate ³	No.	Rate ³	No.	No.
Quebec—concluded											
Sherbrooke, c.	1,751	1,843	463	482	1,288	1,361	41	55	30	537	477
Sillery, c.	266	270	63	78	203	192	30	7	26	51	62
Sorel, c.	510	448	137	136	373	312	52	25	56	134	95
Theftord Mines, c.	574	678	126	124	448	554	46	28	41	149	122
Trois Rivières, c.	1,440	1,567	389	379	1,051	1,188	46	50	32	493	456
Valleyfield, c.	725	836	190	191	535	645	47	27	32	219	237
Verdun, c.	1,807	1,837	587	644	1,220	1,193	22	46	25	704	636
Victoriaville, t.	476	503	147	144	329	359	73	20	40	135	124
Westmount, c.	264	269	287	289	-23	-20	30	6	22	451	346
Ontario—											
Barrie, t.	432	565	137	174	295	391	25	21	37	184	186
Belleville, c.	540	585	195	224	345	361	29	8	14	254	254
Brampton, t.	254	365	94	95	160	270	28	5	14	114	126
Brantford, c.	989	1,227	409	504	580	723	28	29	24	458	464
Brockville, t.	308	389	145	146	163	243	40	7	18	148	161
Chatham, c.	569	589	223	223	346	366	31	18	31	293	247
Cornwall, c.	507	1,354	166	332	341	1,022	32	38	28	247	365
Eastview, t.	619	975	91	134	528	841	34	25	26	146	175
Forest Hill, vl.	232	225	107	144	125	81	15	2	9	27	18
Fort William, c.	991	1,101	319	359	672	742	21	28	25	411	409
Galt, c.	494	602	200	257	294	345	22	5	8	213	220
Guelph, c.	775	991	309	302	466	689	30	23	23	339	344
Hamilton, c.	5,682	6,505	2,014	2,179	3,668	4,326	28	143	32	2,545	2,442
Kenora, t.	255	287	74	109	181	178	26	10	35	110	112
Kingston, c.	1,182	1,305	448	461	734	844	31	30	23	474	464
Kitchener, c.	1,437	1,772	405	497	1,032	1,275	21	30	17	617	549
Leaside, t.	288	198	101	134	187	64	18	2	10	100	84
Lindsay, t.	228	251	129	135	99	116	37	8	32	116	114
London, c.	2,428	2,625	1,074	1,062	1,354	1,563	26	77	29	1,206	1,257
Long Branch, vl.	251	342	52	84	199	258	21	16	47	116	87
Mimico, t.	308	418	107	94	201	324	18	7	17	146	194
New Toronto, t.	233	289	81	92	152	197	13	8	28	114	93
Niagara Falls, c.	595	573	233	217	362	356	30	9	16	498	395
North Bay, c.	558	756	182	204	376	552	32	24	32	281	289
Orillia, t.	375	374	134	165	241	209	34	6	16	146	158
Oshawa, c.	1,239	1,562	325	361	914	1,201	30	36	23	449	452
Ottawa, c.	5,325	5,972	2,006	2,112	3,319	3,860	31	163	27	2,130	2,116
Owen Sound, c.	412	393	187	176	225	217	32	6	15	195	154
Pembroke, t.	430	480	129	149	301	331	47	18	38	176	193
Peterborough, c.	1,104	1,168	349	407	755	761	25	31	27	380	430
Port Arthur, c.	956	1,026	347	417	609	609	25	25	24	389	429
Port Colborne, t.	360	389	101	108	259	281	32	8	21	131	127
Riverside, t.	336	462	72	94	264	368	22	9	19	63	54
St. Catharines, c.	903	915	369	387	534	528	23	18	20	582	544
St. Thomas, c.	405	431	233	242	172	189	24	13	30	200	194
Sarnia, c.	1,188	1,426	291	323	897	1,103	32	35	25	365	360
Sault Ste. Marie, c.	1,014	1,179	292	318	722	861	25	26	22	448	509
Stratford, c.	432	462	218	220	214	232	28	10	22	161	177
Sudbury, c.	1,623	1,590	303	325	1,320	1,265	34	48	30	660	659
Timmins, t.	821	793	202	201	619	592	38	21	26	271	239
Toronto, c.	14,750	15,943	7,630	7,224	7,120	8,722	25	366	23	11,705	12,405
Trenton, t.	366	415	89	91	277	324	32	13	31	134	126
Waterloo, c.	368	463	96	135	272	328	18	10	22	127	118
Welland, c.	427	385	118	156	309	229	23	10	26	294	259
Windsor, c.	3,110	2,749	1,105	1,106	2,005	1,643	30	84	31	1,585	1,270
Woodstock, c.	390	488	167	181	223	307	19	10	20	175	173
Manitoba—											
Brandon, c.	555	670	201	208	354	462	26	13	19	287	259
Flin Flon, t.	367	297	47	43	320	254	27	8	27	90	99
Fort Garry, s.m.	..	459	..	78	..	381	..	5	41	..	45
Kildonan East, c.	..	549	..	128	..	421	..	16	29	..	102
Kildonan West, s.m.	..	369	..	102	..	267	..	5	14	..	33
Portage la Prairie, c.	263	371	93	99	170	272	31	6	16	129	111
St. Boniface, c.	753	947	209	278	544	669	27	23	24	280	285
St. James, c.	..	709	..	180	..	529	..	16	23	..	224

¹ As at the 1956 Census; residents only.² By place of occurrence.³ Per 1,000 live births.

2.—Summary of Principal Vital Statistics for Urban Centres of 10,000 Population or Over,¹ 1951-55—concluded

Province and Urban Centre	Live Births		Deaths		Natural Increase		Infant Mortality			Marriages ²	
	Av. 1951-55	1958	Av. 1951-55	1958	Av. 1951-55	1958	Av. 1951-55	1958		Av. 1951-55	1958
	No.	No.	No.	No.	No.	No.	Rate ³	No.	Rate ³	No.	No.
Manitoba—concluded											
St. Vital, s.m.....		630		155		475		16	25		119
Winnipeg, c.....	5,766	5,969	2,408	2,610	3,358	3,359	26	154	26	3,350	2,722
Saskatchewan—											
Moose Jaw, c.....	774	923	287	290	487	633	27	14	15	365	298
Prince Albert, c.....	558	603	133	176	425	427	29	20	33	279	268
Regina, c.....	2,143	2,880	589	636	1,554	2,244	23	51	18	1,039	1,017
Saskatoon, c.....	1,811	2,565	529	693	1,282	1,872	28	67	26	872	855
Swift Current, c.....	275	367	77	84	198	283	33	8	22	133	124
Alberta—											
Calgary, c.....	4,462	6,737	1,304	1,582	3,158	5,155	27	171	25	2,015	2,249
Edmonton, c.....	6,481	8,570	1,346	1,607	5,135	6,963	23	198	23	2,823	3,141
Jasper Place, t.....	442	847	87	78	405	769	18	24	28	16	18
Lethbridge, c.....	816	921	195	233	621	688	25	15	16	406	361
Medicine Hat, c.....	464	587	173	206	291	381	20	8	14	283	251
Red Deer, c.....	358	605	73	111	285	494	23	8	13	173	218
British Columbia—											
Burnaby, d.m.....	..	2,556	..	684	..	1,872	..	56	22	..	491
Chilliwack, d.m.....	..	468	..	120	..	348	..	10	21	..	94
Coquitlam, d.m.....	..	625	..	96	..	529	..	12	19	..	66
Esquimalt, d.m.....	..	300	..	76	..	224	..	3	10	..	130
Langley, d.m.....	..	358	..	131	..	227	..	6	17	..	66
Maple Ridge, d.m.....	..	367	..	132	..	235	..	6	16	..	104
Matsqui, d.m.....	..	321	..	93	..	228	..	4	12	..	95
Nanaimo, c.....	331	405	151	181	180	224	25	11	27	208	184
New Westminster, c.....	584	673	272	323	312	350	19	13	19	574	559
North Vancouver, c.....	647	669	190	176	457	493	19	14	21	152	138
North Vancouver, d.m.....	..	952	..	179	..	773	..	16	17	..	123
Oak Bay, d.m.....	..	223	..	189	..	34	..	3	13	..	83
Penticton, c.....	247	257	89	110	158	147	32	6	23	107	120
Port Alberni, c.....	255	334	56	77	199	257	25	13	39	92	114
Prince George, c.....	370	591	69	63	301	528	33	12	20	154	218
Prince Rupert, c.....	302	372	95	95	207	277	41	17	46	135	104
Richmond, d.m.....	..	1,007	..	144	..	863	..	17	17	..	121
Saanich, d.m.....	..	992	..	367	..	625	..	18	18	..	129
Surrey, d.m.....	..	1,768	..	463	..	1,305	..	33	19	..	224
Trail, c.....	380	298	74	86	306	212	21	8	27	115	107
Vancouver, c.....	7,738	8,395	4,223	4,508	3,515	3,887	22	176	21	4,587	4,695
Victoria, c.....	1,159	1,297	768	843	391	454	21	31	24	777	700
West Vancouver, d.m.....	..	385	..	182	..	203	..	7	18	..	118

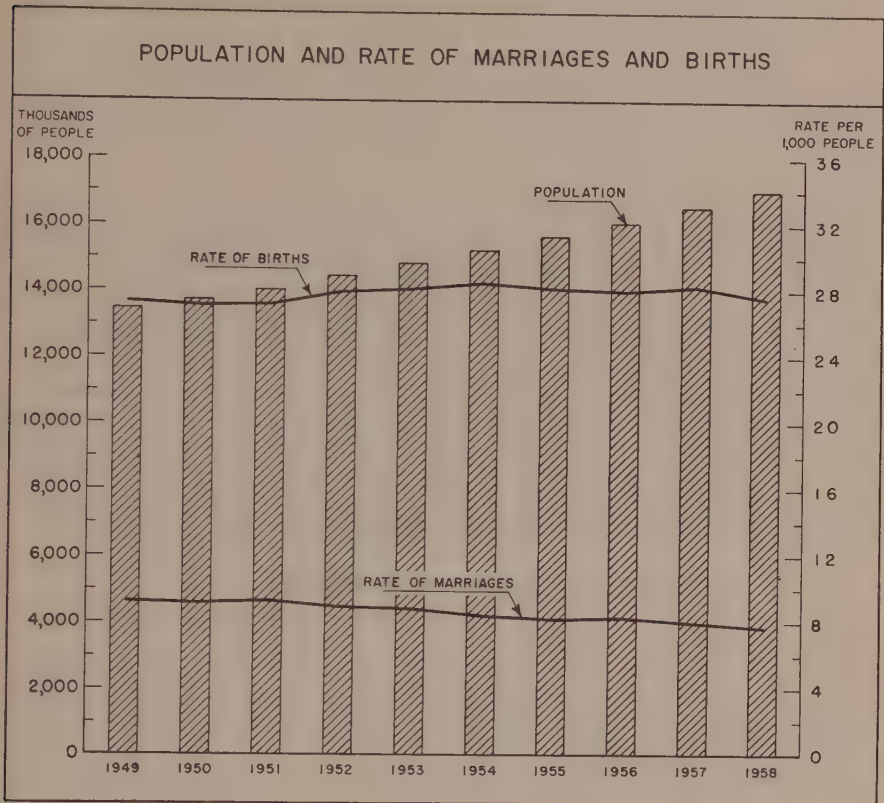
¹ As at the 1956 Census: residents only.² By place of occurrence.³ Per 1,000 live births.

Section 2.—Births*

The Canadian birth rate in 1921 was 29 per 1,000 population. As a rate of 35 is very high for countries of modern western civilization, the Canadian rate had probably not fallen far, nor for long, before 1921. It fell continuously until 1937 when it reached a low of 20 but, as a result of economic recovery and the War, it rose to 22 in 1940, 24 in 1943 and a record high of nearly 29 in 1947. Since then it has fluctuated between 27 and 28.5 and in 1958 stood at 27.6.

The birth rates in most provinces followed similar trends but there were some regional differences in the birth rate pattern in recent years. Although all provinces had record high rates immediately following World War II, average birth rates in Ontario and the western provinces were higher during 1951-55 than those for the 1946-50 period, while those for Quebec and the Maritimes were lower. In fact, Ontario, British Columbia and Alberta had record high crude birth rates during the past three to four years.

* For international comparisons, see Section 7, pp. 267-268.



It is popularly assumed that the Province of Quebec has the highest birth rate in Canada, but Table 1 shows that since the late 1930's or early 1940's Newfoundland and, in some years, New Brunswick have had higher rates than Quebec. In 1958, Newfoundland had a crude rate of 33.8 followed by Alberta with a rate of 30.7, Quebec 29.0 and New Brunswick 28.4; Manitoba and British Columbia had the lowest rates at 24.9 and 25.6, respectively. However, these crude rates are based on total population and therefore do not reflect the fertility of the women who are of reproductive age in the different provinces. A more accurate measure of fertility is the rate based on the number of married women in the population in the main reproductive ages, 15 to 44 years. The numbers of children born in 1957 and 1958 to every 1,000 married women in this age group were as follows:—

Province	1957	1958	Province	1957	1958
Prince Edward Island.....	223	214	Saskatchewan.....	189	188
Nova Scotia.....	194	189	Alberta.....	194	194
New Brunswick.....	229	216	British Columbia.....	163	163
Quebec.....	218	212			
Ontario.....	169	166	CANADA*.....	188	184
Manitoba.....	174	168			

* Excludes Newfoundland and the Territories for which data are not available.

On this basis, New Brunswick, Prince Edward Island and Quebec had the highest fertility rates and British Columbia and Ontario the lowest.

Also contrary to popular impression, since 1953 more babies were born each year in Ontario than in the Province of Quebec; in 1958, 152,637 babies were born to Ontario mothers as compared with 141,396 to Quebec mothers. Altogether, 470,118 children were born in Canada in 1958, a record number.

Sex of Live Births.—Wherever birth statistics have been collected they have shown an excess of male over female births. No conclusive explanation of this excess has yet been given. Nevertheless it is so much of an accepted statistical fact that a proper ratio of male to female births has become one of the criteria of complete registration. The number of males to every 1,000 females born in Canada has varied since the middle 1930's between 1,047 and 1,067 annually and averages around 1,057. Provincial sex ratios vary much more widely because of the relatively small number of births involved—the smaller the total number of births, the greater the chance of wide sex-ratio variations from year to year. Another commonly acknowledged fact in many countries—although there is no generally accepted explanation for it—is that the male ratio appears to rise during or shortly after major wars. This seems to have happened in Canada between 1942 and 1945 when the ratio rose to an average of 1,064 during these four years as compared with averages of 1,054 between 1931-41 and 1,057 since 1946.

3.—Sex Ratios of Live Births, 1931-58

NOTE.—Figures for Newfoundland are included from 1949 and those for the Yukon and Northwest Territories from 1950.

Year	Males	Females	Males to 1,000 Females	Year	Males	Females	Males to 1,000 Females
	No.	No.	No.		No.	No.	No.
1931.....	123,622	116,851	1,058	1945.....	148,912	139,818	1,065
1932.....	121,082	114,584	1,057	1946.....	169,945	160,787	1,057
1933.....	114,388	108,480	1,054	1947.....	183,973	175,121	1,051
1934.....	113,323	107,980	1,049	1948.....	178,123	169,184	1,053
1935.....	113,293	108,158	1,047	1949.....	188,339	177,800	1,059
1936.....	113,289	107,082	1,058	1950.....	191,413	180,596	1,060
1937.....	113,143	107,092	1,057	1951.....	195,918	185,174	1,058
1938.....	117,862	111,584	1,056	1952.....	208,070	195,489	1,064
1939.....	117,594	111,874	1,051	1953.....	214,423	203,461	1,054
1940.....	125,279	119,037	1,052	1954.....	224,168	212,030	1,057
1941.....	131,175	124,142	1,057	1955.....	227,382	215,555	1,055
1942.....	140,584	131,729	1,067	1956.....	231,697	219,042	1,058
1943.....	145,725	137,855	1,057	1957.....	241,073	228,020	1,057
1944.....	146,652	137,568	1,066	1958.....	241,675	228,443	1,058

Hospitalized Births.—In 1958 almost 92 p.c. of all Canadian births occurred in hospital. Table 4 indicates the rise in hospitalized births in each province since 1931. Although the percentages have increased steadily in all provinces, they still vary widely from province to province. The existence of prepaid or provincially sponsored hospital, maternity or medical care plans in some provinces, the unavailability of hospital facilities in others—particularly in remote rural areas—and preference for home delivery in some local areas are among the factors accounting for provincial variations in this respect. The noticeable increases in hospitalized births within recent years in those provinces that previously had the lowest proportion may be partly the result of increased hospital services being provided in those areas.

4.—Percentages of Live Births Hospitalized, by Province, 1931-58

Year	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Canada ¹
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1931.....	11.2	19.0	12.1	7.3	38.2	43.6	32.5	47.8	65.0	..	..	26.8
1941.....	32.7	50.4	30.8	17.6	67.5	73.6	63.2	77.1	87.3	..	..	48.9
1951.....	88.3	87.2	70.7	53.0	93.1	93.1	95.2	93.6	97.3	87.4	32.8	79.1
1955.....	93.6	93.3	83.4	66.6	96.7	95.6	97.7	95.0	98.1	89.3	45.5	86.5
1956.....	95.2	93.9	84.7	71.2	97.3	95.8	97.6	96.6	98.3	87.7	44.6	88.4
1957.....	96.7	95.1	86.8	75.6	97.9	96.4	98.3	97.5	98.5	91.3	38.6	90.2
1958.....	99.0	96.2	88.5	79.3	98.0	96.8	98.5	97.7	98.5	92.6	42.1	91.7

¹ Excludes Newfoundland for which data are not available.

Births in Urban Centres.—Table 2, pp. 238-240, shows the number of births in 1958, as compared with the average for 1951-55, to mothers residing in urban centres of 10,000 population or over.

Illegitimacy.*—In 1958, 4 p.c. of the live births in Canada were illegitimate. This percentage is low compared with that of many countries of the world. In the five-year period 1926-30 it was 3 p.c., whereas the average of the years 1951-55 was 3.8 p.c.

* The term "illegitimate", for statistical purposes, does not refer to births conceived out of wedlock but to those in which parents reported themselves as not having been married to each other at the time of the birth or the registration of the birth.

5.—Illegitimate Live Births and Percentages of Total Live Births, by Province, 1931-58

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Canada ¹
ILLEGITIMATE LIVE BIRTHS													
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Av. 1931-35..	205	74	652	373	2,431	2,707	501	651	613	330	..	..	8,333
" 1936-40..	246	83	766	415	2,539	2,939	506	663	643	475	..	..	9,030
" 1941-45..	406	107	1,074	591	3,003	3,751	597	673	852	889	..	..	11,536
" 1946-50..	441	152	1,244	754	3,382	4,256	766	914	1,202	1,516	..	..	14,375
" 1951-55..	426	139	1,082	659	4,086	4,065	969	1,044	1,481	1,898	53	50	15,951
1956.....	529	154	1,194	688	4,454	4,415	1,002	1,058	1,674	2,207	60	75	17,510
1957.....	635	142	1,168	711	4,506	4,796	1,070	1,168	1,810	2,473	63	87	18,629
1958.....	593	131	1,165	698	4,625	4,907	1,176	1,138	1,896	2,515	75	108	19,027
PERCENTAGES OF TOTAL LIVE BIRTHS													
Av. 1931-35..	3.1	3.8	5.7	3.6	3.1	4.2	3.7	3.2	3.7	3.3	..	..	3.6
" 1936-40..	3.2	4.0	6.4	3.7	3.2	4.6	3.7	3.6	3.9	3.9	..	..	3.9
" 1941-45..	4.4	4.9	7.1	4.5	3.1	4.8	3.8	3.6	4.5	5.0	..	..	4.2
" 1946-50..	3.6	5.3	6.9	4.5	2.9	4.0	4.0	4.2	4.9	5.9	..	..	4.1
" 1951-55..	3.2	5.1	5.9	4.0	3.2	3.2	4.5	4.4	4.8	6.1	12.9	7.5	3.8
1956.....	3.6	5.8	6.2	4.2	3.3	3.1	4.6	4.4	4.8	6.1	12.5	9.6	3.9
1957.....	4.1	5.3	6.0	4.2	3.2	3.2	4.8	4.9	5.1	6.4	12.8	9.7	4.0
1958.....	4.0	5.1	6.2	4.3	3.3	3.2	5.4	4.8	5.1	6.4	15.9	11.4	4.0

¹ Figures for Newfoundland are included from 1949, and those for the Yukon and Northwest Territories from 1951.

Stillbirths.*—As is shown in Table 6, about 7,000 fetuses, where the mother was pregnant at least 28 weeks, are born dead annually. The 6,726 stillbirths in 1958 represented a rate of 14.3 for every 1,000 fetuses born alive. The stillbirth rate has been decreasing steadily and has been cut by more than half over the past quarter-century. Although the variations between provincial rates have never been wide, rates in some provinces have been reduced more than in others. The stillbirth rate among unmarried mothers has been consistently higher than that among married mothers, but this difference has been narrowing in recent years.

* In recent years, provincial laws define a stillbirth, as here compiled, as the birth of a fetus after a 28-week gestation which, when completely separated from the mother, "does not show any sign of life"; in earlier years, they include only those of 28-week gestation which showed no sign of "breathing".

6.—Stillbirths and Rates per 1,000 Live Births, by Province, 1931-58

Year	Born to All Mothers													Born to Unmarried Mothers ¹	
	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Canada ²	No.	P.C. of Total
STILLBIRTHS															
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.		
Av. 1931-35	141	67	401	302	2,337	2,284	383	488	421	247	..	2	6,933	381	5.50
" 1936-40	162	61	334	282	2,386	2,008	340	393	359	248	2	3	6,415	337	5.26
" 1941-45	191	50	388	295	2,786	1,988	345	348	327	309	1	6	6,845	355	5.20
" 1946-50	215	54	358	320	2,898	2,020	349	350	385	352	2	8	7,187	343	4.85
" 1951-55	222	52	337	291	2,705	2,017	336	313	425	374	6	11	7,088	316	4.60
1956.....	260	51	337	331	2,584	1,969	316	291	409	413	4	11	6,976	311	4.63
1957.....	259	46	325	252	2,551	1,999	302	280	385	422	5	11	6,837	299	4.55
1958.....	267	42	319	254	2,424	2,017	309	270	395	414	5	10	6,726	286	4.43
RATES PER 1,000 LIVE BIRTHS														Rate per 1,000 Illegitimate Live Births ¹	
Av. 1931-35	21.1	34.2	34.9	28.9	29.6	35.1	28.0	24.0	25.4	24.7	4.1	11.6	30.3	45.7	
" 1936-40	21.2	29.7	27.7	25.4	30.4	31.2	25.2	21.0	22.0	20.5	26.2	13.2	28.0	37.3	
" 1941-45	20.5	22.8	25.6	22.6	28.5	25.6	21.8	18.9	17.4	17.5	11.4	15.7	24.7	30.8	
" 1946-50	17.4	18.9	19.9	19.0	25.1	19.2	18.1	16.0	15.9	13.6	8.7	12.5	20.2	24.2	
" 1951-55	17.0	19.0	18.4	17.7	21.0	15.6	15.7	13.3	13.7	11.9	14.1	16.5	17.0	20.3	
1956.....	17.9	19.2	17.6	20.0	19.0	13.7	14.4	12.1	11.7	11.4	8.3	14.0	15.5	18.3	
1957.....	16.9	17.2	16.8	14.8	18.0	13.2	13.5	11.7	10.8	10.9	10.1	12.2	14.6	16.6	
1958.....	18.0	16.3	16.9	15.5	17.1	13.2	14.2	11.3	10.7	10.5	10.6	10.6	14.3	15.5	

¹ Exclusive of Newfoundland for all years and of the Yukon and Northwest Territories for 1931-50. ² Figures for Newfoundland are included from 1949.

Multiple Births.—Approximately one confinement in 90 in Canada results in the birth of more than one child as compared with one in 85 several years ago—in other words the chances of a confinement resulting in the birth of more than one child are fewer now than formerly. Other facts illustrated by Table 7 are that the proportion of stillbirths is higher among multiple than among single births and is about twice as high for twins and between three and five times as high for triplets.

7.—Single and Multiple Births, Live and Stillborn, 1955-58

Confinements and Births	Numbers				Percentages			
	1955 ¹	1956	1957	1958	1955 ¹	1956	1957	1958
Confinements	443,586	452,607	470,651	471,436	100.0	100.0	100.0	100.0
Single.....	438,639	447,547	465,423	466,065	98.9	98.9	98.9	98.9
Twin.....	4,897	5,012	5,178	5,334	1.1	1.1	1.1	1.1
Triplet.....	50	48	49	37	--	--	--	--
Quadruplet.....	—	—	1	—	--	--	--	--
Births	448,583	457,715	475,930	476,844	100.0	100.0	100.0	100.0
Single—								
Live.....	432,089	440,916	458,859	459,652	98.5	98.5	98.6	98.6
Stillborn.....	6,550	6,631	6,564	6,413	1.5	1.5	1.4	1.4
Twin—								
Live.....	9,453	9,683	10,093	10,360	96.5	96.6	97.5	97.1
Stillborn.....	341	341	263	308	3.5	3.4	2.5	2.9
Triplet—								
Live.....	139	140	137	106	92.7	97.2	93.2	95.5
Stillborn.....	11	4	10	5	7.3	2.8	6.8	4.5
Quadruplet—								
Live.....	—	—	4	—	—	—	100.0	—
Stillborn.....	—	—	—	—	—	—	—	—
Totals, Live Births	441,681	450,739	469,093	470,118	98.5	98.5	98.6	98.6
Totals, Stillborn	6,902	6,976	6,837	6,726	1.5	1.5	1.4	1.4

¹ Excludes the Yukon and Northwest Territories.

Fertility Rates.—Sex and age distribution of the population is an important factor in determining birth, death and marriage rates. More than 99 p.c. of the children born are to women between the ages of 15 and 50, so that, as noted earlier, variations in the proportion of women of these ages to the population as a whole will cause variations in the crude birth rates of different countries or regions even though the fertility of women at each age may be the same. Measures of fertility which are independent of the sex and age distribution of the population have therefore been devised. The best known of these are age-specific fertility rates—either per 1,000 *total* women* or per 1,000 *married* women in these age groups—and reproduction rates.

Ages of Parents.—Age of parents is an important variable in any analysis of birth statistics. The distribution of legitimate and illegitimate live births by age of the parents is given in Table 8, and for stillbirths in Table 9, as well as the average age of parents.

More than 6 p.c. of the legitimate children born each year are born to mothers under 20 years of age, in about one-third of the births the mother is under 25 years, and in almost two-thirds, under 30 years; in over 47 p.c. of all births the father is under 30 years of age. On the other hand, over one-third of the illegitimate infants born are born to mothers under 20 years of age and an additional one-third to mothers under 25 years.

* Available from DBS annual report, *Vital Statistics* (Catalogue No. 84-202).

8.—Live Births, by Age of Parents, 1958

(Exclusive of Newfoundland)

Age Group	Legitimate				Illegitimate	
	Fathers		Mothers		Mothers	
	No.	p.c.	No.	p.c.	No.	p.c.
Under 20 years.....	4,155	1.0	29,452	6.7	6,460	36.1
20 — 24 ".....	70,299	16.2	122,440	28.0	5,976	33.4
25 — 29 ".....	131,997	30.3	128,860	29.5	2,808	15.7
30 — 34 ".....	107,417	24.7	89,825	20.6	1,515	8.5
35 — 39 ".....	67,914	15.6	50,350	11.5	845	4.7
40 — 44 ".....	33,844	7.8	14,593	3.3	263	1.5
45 — 49 ".....	13,729	3.2	1,143	0.3	24	0.1
50 years or over.....	5,581	1.3	13	--	--	--
Totals, Stated Ages.....	434,936	100.0	436,676	100.0	17,891	100.0
Ages not stated.....	1,933	...	193	...	543	...
Totals, All Ages.....	436,869	100.0	436,869	100.0	18,434	100.0
Average ages.....	31.5		28.2		23.8	

Table 9 illustrates the fact that the risk of having a stillborn child increases with the age of the mother. Although stillbirth rates for mothers of all ages have been declining in recent years, they continue to be three times as high among mothers of 40-44 years and about five times as high among those over 45 years as for mothers under 30.

9.—Stillbirths and Rates per 1,000 Live Births, by Age of Mother, 1958

(Exclusive of Newfoundland)

Age Group of Mother	Numbers		Stillbirth Rate per 1,000 Live Births
	Live Births	Stillbirths	
	No.	No.	No.
Under 20 years.....	35,912	393	10.9
20 — 24 ".....	128,416	1,297	10.1
25 — 29 ".....	131,668	1,527	11.6
30 — 34 ".....	91,340	1,441	15.8
35 — 39 ".....	51,195	1,146	22.4
40 — 44 ".....	14,856	546	36.8
45 — 49 ".....	1,167	70	60.0
50 years or over.....	13	2	153.8
Ages not stated.....	736	37	...
Totals, All Ages.....	455,303	6,459	14.2
Average age of mothers.....	30.4		

Order of Birth.—Table 10 shows the order of birth of all live-born infants in 1958 according to age of the mother. As would be expected, 26,915 or three out of every four of the 35,912 infants born to mothers under 20 years of age were first children, whereas almost six out of every ten of the children born to mothers of 20-24 years were second or later children. This is a reflection of the earlier marriages and heavy fertility of recent years.

Table 11 summarizes the pattern of family formation since 1931. The results of the immediate postwar 'baby boom' are obvious—57.9 p.c. of the infants born in 1947 were first or second children while fewer than half of the 1958 babies were first or second children.

10.—Order of Birth of Live-Born Children, by Age of Mother, 1958

(Exclusive of Newfoundland)

Order of Birth of Child	Age of Mother										Percentage of Total
	Under 15	15-19	20-24	25-29	30-34	35-39	40-44	45 or Over	Age Not Stated	All Ages	
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	
1st child.....	201	26,714	55,096	26,782	9,508	3,422	726	49	567	123,065	27.0
2nd ".....	3	7,507	41,199	35,586	15,846	5,724	1,056	67	55	107,043	23.5
3rd ".....	—	1,291	20,066	29,884	19,558	8,015	1,545	80	32	80,471	17.7
4th ".....	—	172	8,093	18,728	15,895	8,104	1,844	114	16	52,966	11.6
5th ".....	—	17	2,739	10,345	10,819	6,773	1,700	95	19	32,507	7.1
6th ".....	—	4	887	5,412	7,075	4,923	1,451	95	11	19,858	4.4
7th ".....	—	1	248	2,750	4,754	3,821	1,233	90	7	12,904	2.8
8th ".....	—	—	66	1,326	3,184	2,959	1,128	93	3	8,759	1.9
9th ".....	—	—	15	564	2,032	2,254	881	64	3	5,813	1.3
10th ".....	—	—	4	200	1,274	1,686	760	79	2	4,005	0.9
11th ".....	—	—	1	62	719	1,301	667	79	1	2,830	0.6
12th ".....	—	—	—	22	378	855	583	56	3	1,897	0.4
13th ".....	—	—	—	4	172	614	405	48	—	1,243	0.3
14th ".....	—	—	—	2	63	341	306	59	—	771	0.2
15th ".....	—	—	—	1	40	200	242	33	—	516	0.1
16th ".....	—	—	—	—	14	99	135	33	—	281	0.1
17th ".....	—	—	—	—	6	39	88	25	—	158	—
18th ".....	—	—	—	—	1	38	39	11	—	88	—
19th ".....	—	—	—	—	—	12	33	4	—	49	—
20th or over.....	—	—	—	—	1	15	31	6	—	53	—
Not stated.....	—	2	2	—	1	—	3	—	17	25	—
Totals.....	204	35,708	128,416	131,668	91,340	51,195	14,856	1,180	736	455,303	100.0

11.—Percentage Distribution of Legitimate Live Births, by Order of Birth, 1931-58

(Exclusive of Newfoundland for all years and the Yukon and Northwest Territories for 1931-49)

Year	1st Child	2nd Child	3rd Child	4th and Later Children	Total
1931.....	23.0	19.3	14.0	43.8	100.0
1932.....	22.1	19.4	14.2	44.3	100.0
1933.....	21.7	19.3	14.6	44.4	100.0
1934.....	22.2	19.0	14.4	44.4	100.0
1935.....	24.0	18.9	14.0	43.1	100.0
1936.....	25.3	19.2	13.4	42.1	100.0
1937.....	26.6	19.8	13.4	40.2	100.0
1938.....	28.2	20.6	13.3	38.0	100.0
1939.....	28.6	21.3	13.7	36.4	100.0
1940.....	30.3	22.1	13.8	33.9	100.0
1941.....	32.7	21.8	13.5	32.0	100.0
1942.....	32.8	23.1	13.4	30.6	100.0
1943.....	32.2	23.7	14.2	29.9	100.0
1944.....	30.0	24.2	14.9	30.9	100.0
1945.....	28.9	24.3	15.4	31.4	100.0
1946.....	31.0	24.8	15.2	29.0	100.0
1947.....	33.0	24.9	15.0	27.2	100.0
1948.....	29.6	26.0	15.9	28.5	100.0
1949.....	27.8	26.6	16.8	28.8	100.0
1950.....	26.7	26.2	17.4	29.6	100.0
1951.....	26.7	25.8	17.6	29.9	100.0
1952.....	26.9	24.8	17.9	30.3	100.0
1953.....	26.5	25.0	18.0	30.6	100.0
1954.....	26.1	24.6	18.0	31.2	100.0
1955.....	25.5	24.4	18.2	31.9	100.0
1956.....	25.2	24.3	18.3	32.2	100.0
1957.....	25.6	23.9	18.3	32.2	100.0
1958.....	25.4	23.8	18.2	32.6	100.0

Section 3.—Deaths*

The Canadian death rate has moved downward from 10.3 per 1,000 of the population in 1931 to 8.2 for each of the years 1954 to 1957 and to a record low of 7.9 for 1958. Table 1, pp. 236-237, shows that this decline has been apparent in varying degrees in all provinces. The generally low rates in the Prairie Provinces are partly the result of their younger average population; the uniformly higher rate in British Columbia is mainly attributable to a high proportion of people in the older age groups.

Subsection 1.—General Mortality

Age and Sex Distribution of Deaths.—There has been a considerable reduction in infant mortality over the past 25 or 30 years, although more deaths still occur in the first year of life than in any other single year. Of the 104,517 deaths occurring in 1931, 25,737 or almost one-quarter were of children under five years of age and over three-quarters of those were of children under one year of age. Of the 135,201 deaths in 1958, 16,327 or 12 p.c. were of children under five years of age and, of those, 14,178 or nearly 87 p.c. were under one year. Most of the reduction took place among children over the age of one month but there was also a notable decrease in all childhood ages up to five years.

The trend in the over-all mortality pattern has been steeply downward since the early 1920's, the most important reduction being in the childhood and early adult ages. In 1931 over 19 p.c. of all male deaths were of persons five to 45 years of age; in 1958 only a little over 10 p.c. of the deaths occurred in this age group. Among females in the five to 45 age group the proportion dropped from just under 22 p.c. to 8 p.c. in the same comparison. While death rates for males up to age 45 have been roughly halved during the past 25 years, those for females under 45 years have been reduced as much as three to four times. In other words, the death rates for females at every age have declined more than those for males; the male rates have almost always been consistently higher than those for females and the differences are widening.

These reductions in the mortality rates in early and middle years of life have had the effect of increasing the number of people in the older age groups and raising the average age at death. In 1931 the average age at death of males was 43.1 years and of females 44.8 years; by 1958 this had advanced to 58.4 years and 61.4 years, respectively. These trends are indicated clearly in Table 12.

* For international comparisons, see Section 7, pp. 267-268.

12.—Distribution of Deaths, by Age and Sex, 1931, 1941, 1951 and 1958

Age Group	1931 ¹		1941 ¹		1951		1958	
	Male	Female	Male	Female	Male	Female	Male	Female
NUMBERS								
Under 1 year.....	11,667	8,693	8,788	6,448	8,375	6,298	8,152	6,026
1 — 4 years.....	2,844	2,533	1,878	1,566	1,421	1,151	1,190	959
5 — 9 ".....	1,241	963	888	670	711	466	679	414
10 — 14 ".....	821	806	787	536	461	284	490	276
15 — 19 ".....	1,311	1,132	1,118	823	721	457	751	306
20 — 24 ".....	1,502	1,453	1,332	1,039	1,009	549	894	328
25 — 29 ".....	1,388	1,414	1,317	1,173	988	660	991	441
30 — 34 ".....	1,301	1,432	1,211	1,148	1,070	778	1,054	636
35 — 39 ".....	1,512	1,574	1,497	1,242	1,281	1,015	1,364	898
40 — 44 ".....	1,888	1,493	1,744	1,464	1,756	1,266	1,926	1,192
45 — 49 ".....	2,314	1,738	2,416	1,817	2,463	1,607	2,831	1,563
50 — 54 ".....	2,855	1,993	3,355	2,227	3,525	2,083	4,003	2,024
55 — 59 ".....	3,057	2,246	4,394	2,851	4,741	2,832	5,321	2,731
60 — 64 ".....	3,583	2,855	5,288	3,483	6,465	3,902	6,607	3,692
65 — 69 ".....	4,249	3,348	6,057	4,412	8,007	5,119	8,527	5,112
70 — 74 ".....	4,867	4,073	6,495	4,981	8,748	6,439	10,068	6,797
75 — 79 ".....	4,368	4,029	6,421	5,461	8,254	6,904	9,980	7,793
80 — 84 ".....	3,206	3,215	5,020	4,906	6,232	6,130	7,844	7,075
85 years or over.....	2,555	2,998	3,846	4,540	5,336	6,319	6,473	7,793
Totals, All Ages.....	56,529	47,988	63,852	50,787	71,564	54,259	79,145	56,056

¹ Excludes the Yukon and Northwest Territories.

12.—Distribution of Deaths, by Age and Sex, 1931, 1941, 1951 and 1958—concluded

Age Group	1931 ¹		1941 ¹		1951		1958	
	Male	Female	Male	Female	Male	Female	Male	Female
PERCENTAGES								
Under 1 year.....	20.6	18.1	13.8	12.7	11.7	11.6	10.3	10.7
1 — 4 years.....	5.0	5.3	2.9	3.1	2.0	2.1	1.5	1.7
5 — 9 ".....	2.2	2.0	1.4	1.3	1.0	0.9	0.9	0.7
10 — 14 ".....	1.5	1.7	1.2	1.1	0.6	0.5	0.6	0.5
15 — 19 ".....	2.3	2.4	1.8	1.6	1.0	0.8	0.9	0.5
20 — 24 ".....	2.7	3.0	2.1	2.0	1.4	1.0	1.1	0.6
25 — 29 ".....	2.5	2.9	2.1	2.3	1.4	1.2	1.3	0.8
30 — 34 ".....	2.3	3.0	1.9	2.3	1.5	1.4	1.3	1.1
35 — 39 ".....	2.7	3.3	2.3	2.4	1.8	1.9	1.7	1.6
40 — 44 ".....	3.3	3.1	2.7	2.9	2.5	2.3	2.4	2.1
45 — 49 ".....	4.1	3.6	3.8	3.6	3.4	3.0	3.6	2.8
50 — 54 ".....	5.0	4.2	5.3	4.4	4.9	3.8	5.1	3.6
55 — 59 ".....	5.4	4.7	6.9	5.6	6.6	5.2	6.7	4.9
60 — 64 ".....	6.3	5.9	8.3	6.9	9.0	7.2	8.3	6.6
65 — 69 ".....	7.5	7.0	9.5	8.7	11.2	9.4	10.8	9.1
70 — 74 ".....	8.6	8.5	10.2	9.8	12.2	11.9	12.7	12.1
75 — 79 ".....	7.7	8.4	10.1	10.7	11.5	12.7	12.6	13.9
80 — 84 ".....	5.7	6.7	7.9	9.7	8.7	11.3	9.9	12.6
85 years or over.....	4.5	6.2	6.0	8.9	7.5	11.6	8.2	13.9
Totals, All Ages.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
RATES PER 1,000 POPULATION								
Under 1 year.....	113.5	87.3	80.6	61.1	46.3	36.4	35.9	27.8
1 — 4 years.....	6.5	5.9	4.4	3.8	2.0	1.7	1.4	1.1
5 — 9 ".....	2.2	1.7	1.7	1.3	1.0	0.7	0.7	0.4
10 — 14 ".....	1.5	1.5	1.4	1.0	0.8	0.5	0.6	0.4
15 — 19 ".....	2.5	2.2	2.0	1.5	1.4	0.9	1.2	0.5
20 — 24 ".....	3.2	3.2	2.6	2.0	1.9	1.0	1.5	0.6
25 — 29 ".....	3.4	3.8	2.7	2.5	1.8	1.1	1.6	0.7
30 — 34 ".....	3.5	4.2	2.8	2.8	2.1	1.5	1.7	1.0
35 — 39 ".....	4.2	4.8	3.8	3.4	2.5	2.0	2.3	1.5
40 — 44 ".....	5.4	5.0	5.0	4.5	3.9	3.0	3.6	2.3
45 — 49 ".....	7.2	6.6	7.3	6.0	6.4	4.5	5.9	3.4
50 — 54 ".....	10.7	9.0	10.6	8.1	10.4	6.5	9.9	5.4
55 — 59 ".....	15.4	13.4	16.0	12.3	16.2	10.2	15.8	8.5
60 — 64 ".....	22.9	20.7	24.2	18.5	24.5	16.1	24.4	13.7
65 — 69 ".....	35.2	30.3	37.3	30.4	35.1	24.9	36.6	22.2
70 — 74 ".....	55.0	49.1	58.5	47.0	54.5	41.6	52.8	35.5
75 — 79 ".....	87.4	82.9	95.7	79.7	87.6	73.3	81.6	82.0
80 — 84 ".....	134.1	127.1	147.6	131.2	135.5	120.7	131.8	107.2
85 years or over.....	228.1	212.6	241.9	229.3	235.1	212.0	224.8	205.1
Totals, All Ages.....	10.5	9.6	10.8	9.1	10.1	7.8	9.2	6.7
Average age at death.....	43.1	44.8	51.5	53.4	56.3	58.7	58.4	61.4

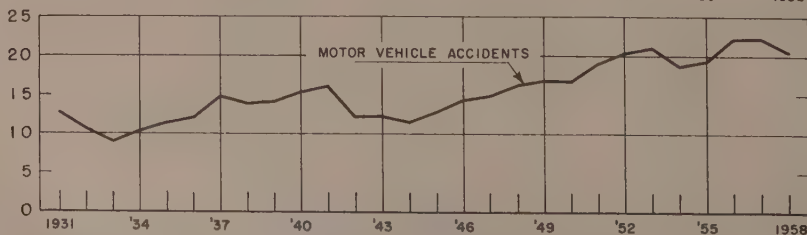
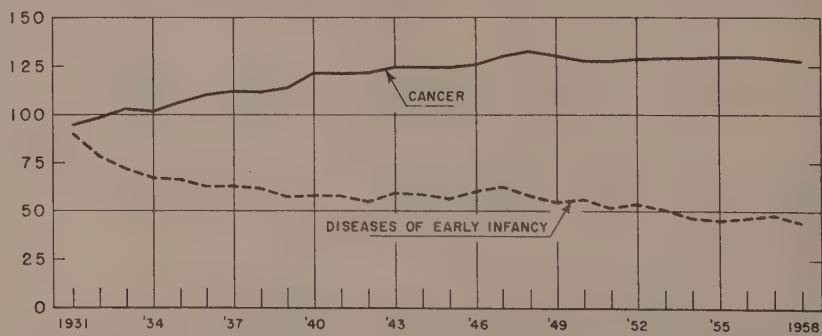
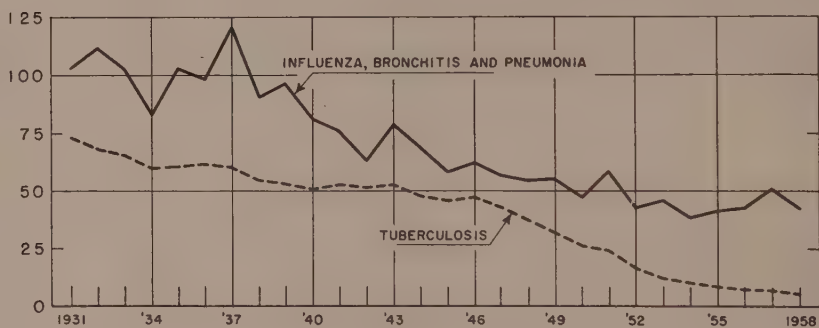
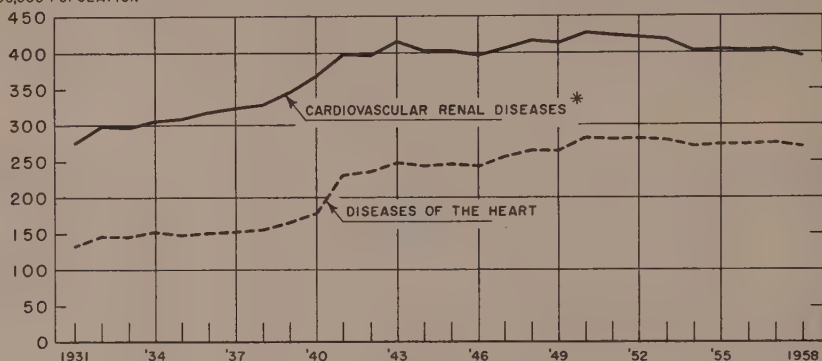
¹ Excludes the Yukon and Northwest Territories.

Deaths in Urban Centres.—Table 2 on pp. 238-240 shows the number of deaths in 1958 for urban centres of 10,000 population or over. Without a knowledge of the age composition of each centre it is difficult to compare rates for various centres. The migration of young people from rural areas to some urban centres and of older people to other centres creates a favourable situation for a low or high rate as the case may be. However, despite differences in the age factor, some urban areas have very low death rates compared with other centres of the same size and with other areas in the same province.

Causes of Death.—Table 13 shows the deaths and death rates in Canada grouped according to the International Abbreviated List of 50 Causes. About 80 p.c. of the deaths are caused by diseases of the heart and arteries, cancer, accidents, diseases of early infancy, the respiratory diseases—tuberculosis, pneumonia and influenza—and nephritis.

MAJOR CAUSES OF DEATH

RATE PER
100,000 POPULATION



* INCLUDES: DISEASES OF HEART (INCL. RHEUMATIC FEVER) AND ARTERIES, INTRACRANIAL LESIONS, CHRONIC NEPHRITIS.

The rise in the average age at death has already been noted (p. 248). Deaths from causes that mainly affect children and young adults have declined. Diphtheria for example has been almost wiped out and tuberculosis has been greatly reduced. On the other hand the aging of the population has increased the proportion of deaths from certain causes that affect older people. Thus, cancer and diseases of the cardiovascular-renal systems now account for a substantially larger proportion of all deaths than formerly.

These trends indicate the remarkable success that has attended the attack by health authorities on the infective and contagious diseases which in the past have constituted such a great hazard in the early and young adult years of life. They have similarly served to emphasize the emergence of the chronic and degenerative conditions of later life as the targets towards which the public health programs of the future will be directed. In effect, Canada has shared the experience of most western nations in exchanging a high mortality in younger life for high morbidity in older age groups.

The Chart on p. 251 shows death rates for the major cause groups from 1931-58.

13.—Deaths and Rates per 100,000 Population, according to the International Abbreviated List of 50 Causes, 1957 and 1958

International List No.		Cause of Death	Numbers of Deaths		Rates per 100,000 Population	
Abbreviated List	Detailed List		1957	1958	1957	1958
B 1	001-008	Tuberculosis of respiratory system.....	1,035	883	6.2	5.2
B 2	010-019	Tuberculosis, other forms.....	148	144	0.9	0.8
B 3	020-029	Syphilis and its sequelæ.....	190	177	1.1	1.0
B 4	040	Typhoid fever.....	12	3	0.1	—
B 5	043	Cholera.....	—	—	—	—
B 6	045-048	Dysentery, all forms.....	25	25	0.2	0.1
B 7	050, 051	Scarlet fever and streptococcal sore throat.....	25	6	0.2	—
B 8	055	Diphtheria.....	20	7	0.1	—
B 9	056	Whooping cough.....	63	40	0.4	0.2
B10	057	Meningococcal infections.....	86	68	0.5	0.4
B11	058	Plague.....	—	—	—	—
B12	080	Acute poliomyelitis.....	26	26	0.2	0.2
B13	084	Smallpox.....	—	—	—	—
B14	085	Measles.....	108	93	0.7	0.5
B15	100-108	Typhus and other rickettsial diseases.....	—	—	—	—
B16	110-117	Malaria.....	1	—	—	—
B17	030-039, 041, 042, 044, 049, 052-054, 059-074, 081-083, 086-096, 120-138, 140-205	All other diseases classified as infective and parasitic.....	348	373	2.1	2.2
B18	(201) (204)	Cancer (all malignant neoplasms) ²	21,390	21,795	128.9	127.8
		Cancer ³	20,266	20,580	122.2	120.7
		Hodgkin's disease.....	234	255	1.4	1.5
		Leukæmia and aleukæmia.....	890	960	5.4	5.6
B19	210-239	Benign and unspecified neoplasms.....	349	294	2.1	1.7
B20	260	Diabetes mellitus.....	1,866	1,869	11.2	11.0
B21	290-293	Anæmias.....	328	398	2.0	2.3
B22	330-334	Vascular lesions affecting central nervous system.....	15,151	15,122	91.3	88.7
B23	340	Non-meningococcal meningitis.....	205	221	1.2	1.3
B24	400-402	Rheumatic fever.....	116	80	0.7	0.5
B25	410-416	Chronic rheumatic heart disease.....	1,609	1,402	9.7	8.2
B26	420-422	Arteriosclerotic and degenerative heart disease.....	38,278	38,853	230.7	227.9
B27	430-434	Other diseases of heart.....	1,969	2,044	11.9	12.0
B28	440-443	Hypertension with heart disease.....	3,781	3,710	22.8	21.8

¹ Less than 0.1 per 100,000.

² Includes Hodgkin's disease, leukæmia and aleukæmia.

³ Excludes Hodgkin's disease, leukæmia and aleukæmia.

13.—Deaths and Rates per 100,000 Population, according to the International Abbreviated List of 50 Causes, 1957 and 1958—concluded

International List No.		Cause of Death	Numbers of Deaths		Rates per 100,000 Population	
Abbreviated List	Detailed List		1957	1958	1957	1958
B29	444-447	Hypertension without mention of heart....	914	1,162	5.5	6.8
B30	480-483	Influenza.....	1,762	760	10.6	4.5
B31	490-493	Pneumonia.....	5,398	5,190	32.5	30.4
B32	500-502	Bronchitis.....	772	854	4.7	5.0
B33	540, 541	Ulcer of stomach and duodenum.....	797	856	4.8	5.0
B34	550-553	Appendicitis.....	184	191	1.1	1.1
B35	560, 561, 570	Intestinal obstruction and hernia.....	763	860	4.6	5.0
B36	543, 571, 572	Gastritis, duodenitis, enteritis and colitis except diarrhoea of the newborn.....	869	1,070	5.2	6.3
B37	581	Cirrhosis of liver.....	969	965	5.8	5.7
B38	590-594	Nephritis and nephrosis.....	2,020	1,844	12.2	10.8
B39	610	Hyperplasia of prostate.....	517	554	3.1	3.2
B40	640-652, 660, 670-689	Complications of pregnancy, childbirth and the puerperium.....	255	263	1.5	1.5
B41	750-759	Congenital malformations.....	2,779	2,830	16.8	16.6
B42	760-762	Birth injuries, postnatal asphyxia and atelectasis.....	3,232	2,931	19.5	17.2
B43	763-768	Infections of the newborn.....	798	710	4.8	4.2
B44	769-776	Other diseases peculiar to early infancy and immaturity (unqualified).....	3,951	3,923	23.8	23.0
B45	780-795	Senility without mention of psychosis, ill-defined and unknown causes.....	1,700	1,526	10.2	9.0
B46	Residual	All other diseases.....	10,685	10,448	64.4	61.3
BE47	E810-E835	Motor vehicle accidents.....	3,694	3,517	22.3	20.6
BE48	E800-E802 E840-E962	All other accidents.....	5,961	5,640	35.9	33.1
BE49	E963, E970-E979	Suicide and self-inflicted injury.....	1,247	1,271	7.5	7.5
BE50	E964, E965 E980-E999	Homicide and operations of war.....	183	203	1.1	1.2
Totals, All Causes.....			136,579	135,261	823.3	793.1

Subsection 2.—Infant Mortality

Table 1 on pp. 236-237 and Table 14 following show the striking improvement that has taken place in the rate of infant mortality during the past quarter-century. Although 70,912 of the 2,269,085 children born in the years 1954-58 died before reaching their first birthday, 142,382 others lived who *would have died* at the rate prevailing in the period 1926-30.

Table 14 shows that mortality among male infants is 25 to 30 p.c. higher than that among female infants for Canada as a whole, with wider variations for the individual provinces. For the country as a whole in 1958, of every 1,000 infant boys born alive, 34 died before reaching their first birthday, whereas out of every 1,000 infant girls 26 died within one year of their birth. As already pointed out, there are on the average 1,057 males born to every 1,000 females, but because male infant mortality is higher the excess of males is reduced drastically by the end of the first year. For example, in 1956-58 there were 714,445 male children born compared with 675,505 female children, an excess of 38,940 or 5.8 p.c.; during the same period 24,573 male children died during their first year compared with 18,521 female children so that the excess of males at one year of age was reduced to 32,878 or 5 p.c.

As indicated in Tables 1, 2 and 14, infant mortality rates vary considerably from province to province and from one locality to another. One of the principal causes of these variations appears to be the different proportions of births that take place in hospital or under proper prenatal and postnatal care (see also p. 242). Many other factors have also been important, particularly the supervision of water supplies, improved sanitation, the pasteurization of milk, the use of antibiotics, more and better pædiatric services, improved obstetrical and hospital nursing services, improved home environment because of generally higher living standards and, in recent years, the lower age of mothers.

14.—Distribution of Infant Deaths, by Province and Sex, 1931-53

Province and Year	Males	Females	Rate per 1,000 Male Live Births	Rate per 1,000 Female Live Births	Province or Territory and Year	Males	Females	Rate per 1,000 Male Live Births	Rate per 1,000 Female Live Births
	No.	No.				No.	No.		
Newfoundland.....1951	361	276	60	48	Manitoba—concl. 1956	365	311	33	29
1956	335	295	45	41	1957	416	295	36	27
1957	363	241	47	32	1958	371	285	33	27
1958	322	250	42	35					
P. E. Island.....1931	78	50	78	57	Saskatchewan.....1931	851	612	78	59
1941	102	61	95	63	1941	531	415	56	46
1951	60	30	44	23	1951	353	323	32	30
1956	60	45	46	33	1956	391	289	32	25
1957	41	34	30	26	1957	358	251	29	22
1958	61	23	46	18	1958	349	267	29	23
Nova Scotia.....1931	510	404	86	71	Alberta.....1931	675	522	76	63
1941	545	363	77	53	1941	506	373	57	44
1951	344	250	39	30	1951	531	358	39	27
1956	325	229	33	25	1956	508	352	28	21
1957	298	228	30	24	1957	531	432	29	25
1958	321	236	33	26	1958	548	384	29	22
New Brunswick....1931	565	379	102	72	British Columbia..1931	292	222	55	44
1941	515	421	83	69	1941	316	236	41	32
1951	472	363	58	46	1951	487	352	34	26
1956	358	298	42	37	1956	509	435	28	24
1957	353	256	37	32	1957	619	477	32	25
1958	340	228	40	29	1958	600	477	30	25
Quebec.....1931	5,417	4,026	126	99	Yukon.....1951	10	9	58	53
1941	3,916	2,854	85	66	1956	11	12	42	55
1951	3,335	2,486	54	42	1957	17	10	66	42
1956	3,130	2,414	45	37	1958	12	8	48	36
1957	3,094	2,318	42	34					
1958	2,981	2,171	41	31	Northwest Territories.....1951	43	27	136	81
					1956	68	49	166	131
Ontario.....1931	2,744	2,089	77	62	1957	66	63	151	136
1941	1,910	1,384	51	40	1958	86	57	169	131
1951	2,010	1,535	34	28					
1956	2,048	1,562	28	22					
1957	2,177	1,599	28	22					
1958	2,161	1,640	27	22					
Manitoba.....1931	535	389	74	55	Canada.....1931 ¹	11,667	8,693	94	74
1941	447	341	59	47	1941 ¹	8,788	6,448	67	52
1951	369	289	36	30	1951	8,375	6,298	43	34
					1956	8,108	6,291	35	29
					1957	8,313	6,204	34	27
					1958	8,152	6,026	34	26

¹ Excludes Newfoundland and the Yukon and Northwest Territories.

Infant Mortality in Urban Centres.—Because of the relatively small numbers of infant deaths in individual cities and towns, the rates for these centres usually vary widely from year to year. As is evident from Table 2, pp. 238-240, many cities and towns have maintained consistently low rates as compared with the national rate or the rate for the province in which they are situated.

Age at Death.—In 1958 the ages of the 14,178 infants who died in their first year of life were by no means evenly spread over the twelve-month span. In fact 12,831 or 90 p.c. of the infants were less than six months old and 9,055 or nearly 64 p.c. were less than one month old. There was a sharp drop to 1,160 in the second month with gradual reductions thereafter to the eleventh month. Of the 9,055 deaths during the first month, 7,658 occurred the first week of life, and no less than 4,437 took place in the first day.

Causes of Infant Deaths.—In 1958 approximately two-thirds of the infant deaths were attributed to five causes. Immaturity was the underlying cause of 2,354 deaths followed closely by congenital malformations with 2,235 fatalities. Deaths from pneumonia in infants of four weeks or over numbered 1,557 in 1958, a significant increase over the 1,460 fatalities from the same cause in 1957. Postnatal asphyxia and atelectasis accounted for 1,508 deaths, and deaths through injury at birth numbered 1,422.

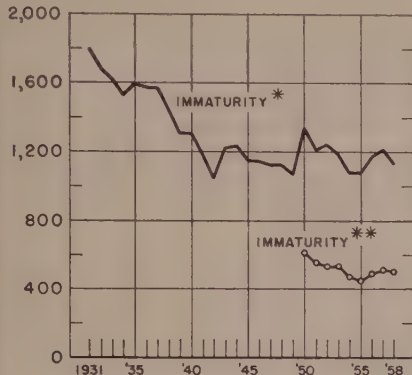
15.—Infant Mortality and Rates per 100,000 Live Births, by Cause, 1956-58

Inter-national List No.	Cause of Death	Numbers of Deaths			Rates per 100,000 Live Births ^a		
		1956	1957	1958	1956	1957	1958
001-019	Tuberculosis.....	18	25	27	4	5	6
020-029	Syphilis.....	6	2	4	1	1	1
045-048	Dysentery.....	22	16	12	5	3	3
050	Scarlet fever.....	1	1	1	1	1	1
052	Erysipelas.....	1	—	—	1	—	—
055	Diphtheria.....	—	—	—	—	—	—
056	Whooping cough.....	93	44	32	21	9	7
057	Meningococcal infections.....	38	38	28	8	8	6
085	Measles.....	72	35	35	16	7	7
140-239	Neoplasms.....	41	43	43	9	9	9
273	Diseases of thymus gland.....	33	16	32	7	3	7
325	Mental deficiency.....	44	40	48	10	9	10
340	Meningitis (non-meningococcal).....	140	99	112	31	21	24
391, 392	Otitis media.....	122	132	92	27	28	20
470-475	Acute upper respiratory infections.....	67	79	56	15	17	12
480-483	Influenza.....	168	285	204	37	61	43
490-493	Pneumonia (4 weeks and over).....	1,600	1,460	1,557	355	311	331
500-502	Bronchitis.....	152	97	133	34	21	28
543	Gastritis and duodenitis.....	3	3	4	1	1	1
560-570	Hernia and intestinal obstruction.....	135	97	117	30	21	25
571	Gastro-enteritis and colitis.....	484	445	590	107	95	126
572	Chronic enteritis, and ulcerative colitis.....	4	2	5	1	1	1
750-759	Congenital malformations.....	2,310	2,265	2,235	512	483	475
760, 761	Injury at birth.....	1,548	1,478	1,422	343	315	302
762	Postnatal asphyxia and atelectasis.....	1,642	1,751	1,508	364	373	321
763	Pneumonia of newborn (under 4 weeks).....	512	551	519	114	117	110
764	Diarrhoea of newborn (under 4 weeks).....	149	187	149	33	40	32
765-768	Other infections of the newborn.....	52	60	42	12	13	9
769	Antenatal toxæmia.....	137	150	141	30	32	30
770	Erythroblastosis.....	334	355	373	74	76	79
771	Hæmorrhagic disease of newborn.....	109	142	107	24	30	23
772	Nutritional maladjustment.....	93	102	76	21	22	16
773	Ill-defined diseases peculiar to early infancy.....	748	764	872	166	163	185
774-776	Immaturity.....	2,224	2,435	2,354	493	519	501
795	Ill-defined and unknown causes.....	215	226	150	48	48	32
E810-E825	Motor vehicle traffic accidents.....	19	15	25	4	3	5
E900-E904	Accidental falls.....	15	8	14	3	2	3
E916	Accidents caused by fire.....	27	33	29	6	7	6
E921, E922	Inhalation and ingestion of food or other object.....	237	304	299	53	65	64
E924, E925	Accidental mechanical suffocation.....	156	143	152	35	30	32
	Other accidental and violent deaths.....	49	53	50	11	11	11
	Other specified causes.....	579	535	529	128	114	113
	Totals, All Causes.....	14,399	14,517	14,178	3,193	3,095	3,016

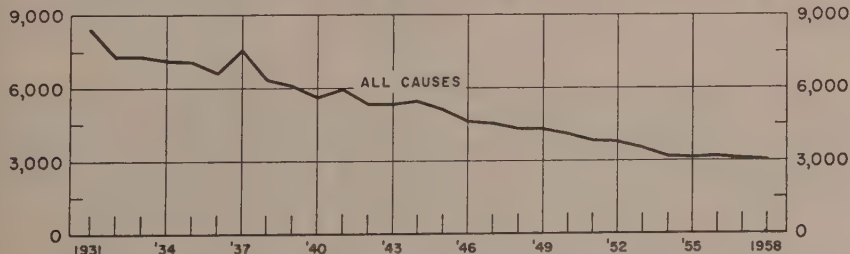
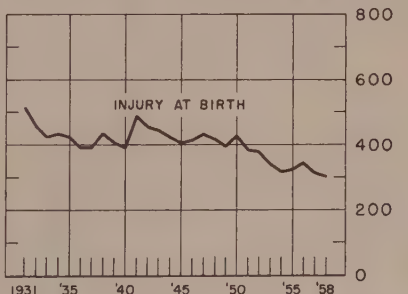
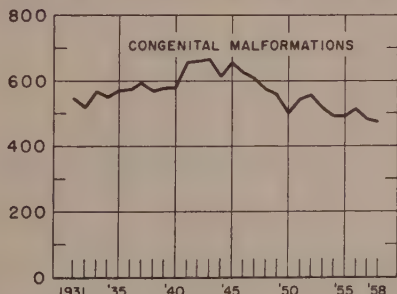
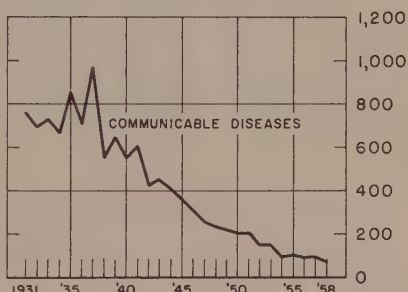
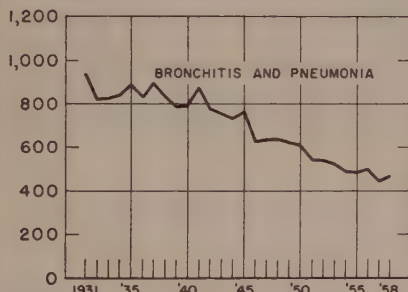
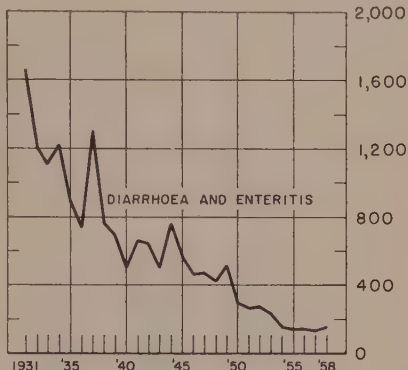
^a Less than one per 100,000 live births.

LEADING CAUSES OF INFANT DEATHS

RATE PER 100,000
LIVE BIRTHS



RATE PER 100,000
LIVE BIRTHS



* DUE TO CHANGES IN CLASSIFICATION, NOT STRICTLY COMPARABLE OVER THE PERIOD; INCLUDES ALL DEATHS INVOLVING IMMATURITY EITHER AS THE UNDERLYING CAUSE OR AS A COMPLICATION.

** INCLUDES CATEGORIES 774-776, INTERNATIONAL STATISTICAL CLASSIFICATION (6th. Rev.) WHERE IMMATURITY REPORTED ALONE AS UNDERLYING CAUSE.

Subsection 3.—Maternal Mortality

As indicated in Table 1, pp. 236-237, the number of mothers who die in pregnancy and childbirth has been greatly reduced during the past two decades. Although the number of births has been much greater in recent years, the number of maternal deaths declined steadily from 1930 (when there were 1,215 deaths and a rate of almost five deaths for every 1,000 births delivered alive) to a record low of 235 in 1957 followed by a slight rise to 249 in 1958. Since 1945 the rate of maternal mortality has dropped below two per 1,000 live births delivered and has been under one per 1,000 live births since 1951. In 1958, however, there was a slight increase in the rate from 0.52 per 1,000 live births to 0.55. Mortality among unmarried mothers is higher than among married mothers.

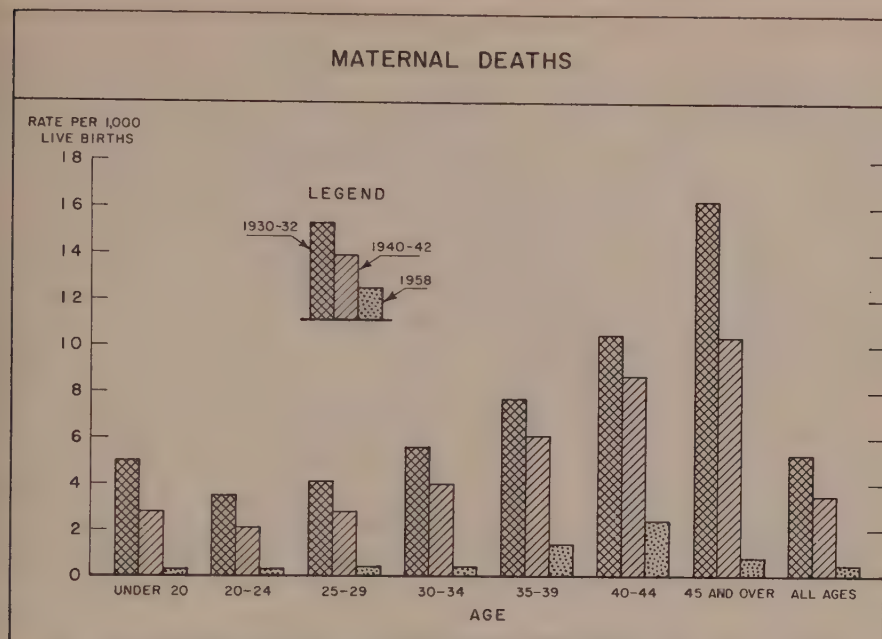
Age at Death.—Table 16 shows the distribution of maternal deaths by age group and average age at death. The latter is about four years higher than the average age of all mothers at the time of childbirth. The rates per 1,000 live births by age group show that age is a most important factor in maternal mortality. Until very recent years the risk of mortality at childbirth was directly related to the age of the mother; in other words for all mothers of over 20 years the rate rose with increasing age. Though rates for all age groups of mothers have been declining, recently there have been rather significant changes in the rates. Formerly the death rates for mothers in the age group 30-34 was twice or three times as high as the rate for the 20-24 group, but in 1957 and 1958 mortality rates for the four age groups of mothers under 35 years of age were not far apart though after the age of 35 there was a sharp rise.

16.—Maternal Mortality and Rates per 1,000 Live Births, by Age Group, 1956-58

(Exclusive of Newfoundland)

Age Group	Maternal Deaths						Rates per 1,000 Live Births		
	1956		1957		1958		1956	1957	1958
	No.	p.c.	No.	p.c.	No.	p.c.			
Under 20 years.....	12	4.7	10	4.3	12	4.8	0.38	0.29	0.33
20 — 24 ".....	29	11.4	44	18.7	37	14.9	0.24	0.35	0.29
25 — 29 ".....	59	23.1	51	21.7	48	19.3	0.46	0.39	0.36
30 — 34 ".....	59	23.1	34	14.5	41	16.5	0.65	0.37	0.45
35 — 39 ".....	56	22.1	60	25.5	74	29.7	1.14	1.17	1.44
40 — 44 ".....	38	14.9	32	13.6	36	14.5	2.51	2.07	2.42
45 — 49 ".....	2	0.8	4	1.7	1	0.4	1.73	3.39	0.86
50 years or over.....	—	—	—	—	—	—	—	—	—
Totals, All Ages.....	255	100.0	235	100.0	249	100.0	0.58	0.52	0.55
Average age at death.....	32.3		31.9		32.4		...	...	...

Causes of Maternal Deaths.—Table 17 shows the main causes of maternal deaths during the years 1956-58. Until a decade or so ago, sepsis and toxæmia were by far the most important causes of death of mothers at childbirth. The danger of death from sepsis and other infection has been drastically reduced over the past 15 to 20 years through the use of antibiotics and probably also through increased use of medical services. On the other hand, the number of deaths caused by toxæmia arising during pregnancy was higher in 1958 than in 1957 and is still a major fatal complication of pregnancy. Hæmorrhage, during pregnancy or delivery, which has been another important cause of mortality among mothers, has shown some reduction in recent years.



17.—Maternal Mortality and Rates per 100,000 Live Births, by Cause, 1956-58

Inter- national List No.	Cause of Death	Numbers of Deaths			Rates per 100,000 Live Births		
		1956	1957	1958	1956	1957	1958
	Complications of Pregnancy	80	71	93	18	15	20
640, 641	Infections of the genito-urinary tract during pregnancy.....	1	1	1	1	1	1
642	Toxæmias of pregnancy.....	53	42	59	12	9	13
643	Placenta prævia noted before delivery.....	—	1	3	—	1	1
644	Other hæmorrhage of pregnancy.....	4	1	2	1	1	1
645	Ectopic pregnancy.....	10	13	6	2	3	1
646-649	Other complications of pregnancy.....	12	13	22	3	3	5
	Abortion	25	39	34	6	8	7
650, 652	Abortion without mention of sepsis.....	11	19	11	2	4	2
651	Abortion with sepsis.....	14	20	23	3	4	5
	Complications of Delivery	132	109	96	29	23	20
660	Delivery (without complication).....	7	—	—	2	—	—
670	Delivery complicated by placenta prævia or antepartum hæmorrhage.....	26	30	29	6	6	6
671	Delivery complicated by retained placenta.....	8	5	6	2	1	1
672	Delivery complicated by other postpartum hæmorrhage.....	29	16	24	6	3	5
673, 674	Delivery complicated by abnormality of bony pelvis or malposition of foetus.....	9	7	3	2	1	1
675	Delivery complicated by prolonged labour of other origin.....	11	9	6	2	2	1
676, 677	Delivery with laceration or other trauma.....	21	13	15	5	3	3
678	Delivery with other complications of childbirth.....	21	29	13	5	6	3
	Complications of the Puerperium	41	36	40	9	8	9
680	Puerperal urinary infection without other sepsis.....	—	—	1	—	—	1
681	Sepsis of childbirth and the puerperium.....	9	8	8	2	2	2
682-684	Puerperal phlebitis, thrombosis, pyrexia, pulmonary embolism.....	19	12	15	4	3	3
685, 686	Puerperal eclampsia and toxæmia.....	5	10	7	1	2	1
687-689	Other.....	8	6	9	2	1	2
	Totals, All Puerperal Causes	278	255	263	62	54	56

¹ Less than one per 100,000 live births.

Section 4.—Natural Increase*

The rate of natural increase in Canada (excess of births over deaths) prior to 1930 was 13 or more per 1,000 population. Partly as a result of the depression, the birth rate declined more than the death rate and the rate of natural increase fell to 9.7 in 1937. Higher birth rates during and after World War II and a gradually declining death rate caused the natural increase rate to rise steadily from 10.9 in 1939 to a record 20.3 in 1954. Since that time there has been a slight drop but the rate remained as high as 19.7 in 1958—probably the highest among the more industrially developed countries of the world.

Table 18 shows the rates of natural increase in the provinces and for each sex separately. The high rates in the Prairie Provinces are partly accounted for by their relatively younger populations and consequent low death rates. High birth rates and declining death rates, particularly in Quebec, have given Newfoundland, Alberta, Quebec and New Brunswick the highest rates of natural increase in Canada in recent years (excluding the Yukon and Northwest Territories).

The rates of natural increase are higher for females than for males in all provinces because of the higher death rates for males. In the western provinces particularly, the ratio of males to females in the total population is higher than in other parts of Canada and this tends to lower the rate of natural increase. In Canada, a country with a fairly young population and where immigration has been on a large scale, an excess of males is to be expected but the higher rate of natural increase for females may gradually reduce this excess. The trend is towards an eventual excess of females in the total population—as there now is in most European countries—unless immigration again raises the male ratio or death rates among males are drastically reduced.

* For international comparisons, see Section 7, pp. 267-268.

18.—Natural Increase and Rates per 1,000 Population, by Sex and Province, 1931-58

Province and Year	Excess of Births Over Deaths	Rate per 1,000 Popu- lation	Males		Females	
			Number	Rate per 1,000 Males	Number	Rate per 1,000 Females
Newfoundland..... Av. 1931-55	10,175	26.5	5,066	25.7	5,108	27.4
1956	11,483	27.6	5,722	26.8	5,761	28.6
1957	12,117	28.5	5,906	26.9	6,211	30.1
1958	11,693	26.7	5,952	26.3	5,741	27.2
Prince Edward Island..... Av. 1931-40	967	10.5	495	10.4	472	10.6
Av. 1941-45	1,216	13.2	608	12.7	608	13.8
Av. 1946-50	1,947	20.7	972	20.0	975	21.3
Av. 1951-55	1,797	18.0	890	17.5	907	18.5
1956	1,724	17.4	765	15.1	959	19.7
1957	1,760	17.7	836	16.7	924	18.9
1958	1,632	16.3	776	15.3	856	17.3
Nova Scotia..... Av. 1931-40	5,674	10.5	2,809	10.1	2,865	10.9
Av. 1941-45	8,820	14.7	4,343	14.1	4,477	15.2
Av. 1946-50	11,952	19.2	5,902	18.6	6,050	19.7
Av. 1951-55	12,444	18.7	6,126	18.2	6,318	19.3
1956	13,368	19.2	6,719	19.0	6,649	19.5
1957	13,339	19.0	6,423	18.0	6,916	20.1
1958	12,778	18.0	6,258	17.3	6,520	18.7
New Brunswick..... Av. 1931-40	5,898	13.7	2,913	13.2	2,985	14.2
Av. 1941-45	7,987	17.3	3,973	16.8	4,014	17.8
Av. 1946-50	11,992	24.2	6,011	23.8	5,982	24.5
Av. 1951-55	11,920	22.4	5,859	21.9	6,062	22.9
1956	11,915	21.5	6,014	21.5	5,901	21.5
1957	12,425	22.0	6,250	21.9	6,175	22.1
1958	11,886	20.6	5,899	20.3	5,987	20.9

18.—Natural Increase and Rates per 1,000 Population, by Sex and Province, 1931-58—concluded

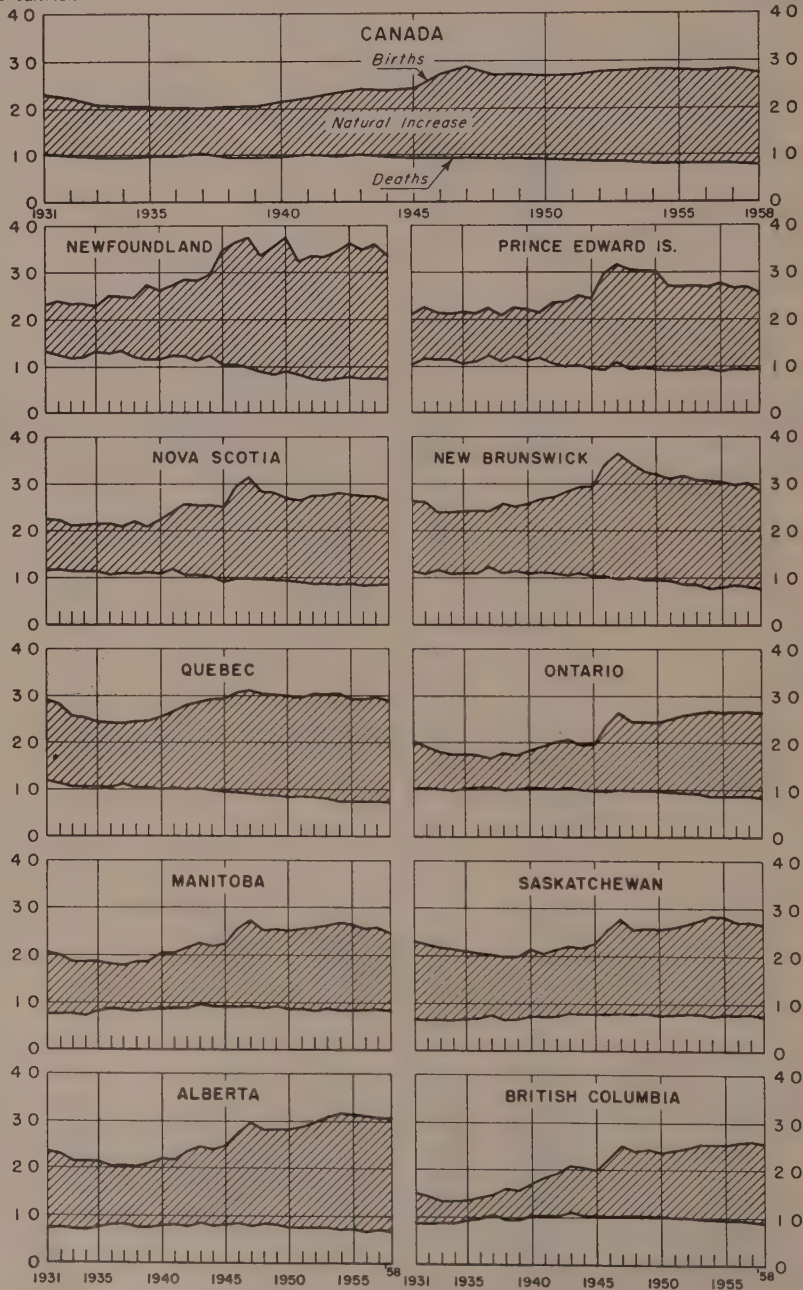
Province or Territory and Year	Excess of Births Over Deaths	Rate per 1,000 Popu- lation	Males		Females		
			Number	Rate per 1,000 Males	Number	Rate per 1,000 Females	
Quebec.....	Av. 1931-40	45,690	14.9	23,087	14.9	22,603	14.8
	Av. 1941-45	63,633	18.5	32,012	18.5	31,621	18.4
	Av. 1946-50	81,773	21.5	41,001	21.6	40,772	21.1
	Av. 1951-55	94,254	22.0	46,897	21.9	47,357	22.2
	1956	100,842	21.8	50,220	21.7	50,622	21.9
	1957	105,473	22.2	52,320	21.9	53,153	22.4
	1958	105,622	21.7	52,027	21.2	53,595	22.0
Ontario.....	Av. 1931-40	27,943	7.8	13,540	7.4	14,403	8.2
	Av. 1941-45	38,000	9.7	18,456	9.3	19,544	10.1
	Av. 1946-50	62,947	14.7	30,699	14.2	32,248	15.2
	Av. 1951-55	84,146	17.1	41,079	16.5	43,067	17.6
	1956	96,285	17.9	46,813	17.2	49,472	18.4
	1957	101,756	18.1	49,498	17.5	52,258	18.7
	1958	103,960	17.9	50,740	17.4	53,220	18.5
Manitoba.....	Av. 1931-40	7,828	11.0	3,709	10.0	4,119	12.1
	Av. 1941-45	9,198	12.7	4,349	11.6	4,849	13.9
	Av. 1946-50	12,627	16.9	6,012	15.7	6,615	18.1
	Av. 1951-55	14,546	18.0	6,866	16.7	7,680	19.3
	1956	14,887	17.5	6,929	16.0	7,958	19.1
	1957	14,994	17.4	7,014	16.0	7,980	18.9
	1958	14,552	16.7	6,851	15.5	7,701	18.0
Saskatchewan.....	Av. 1931-40	13,299	14.5	6,413	12.9	6,886	16.2
	Av. 1941-45	12,007	14.1	5,696	12.5	6,311	16.0
	Av. 1946-50	15,434	18.5	7,302	16.6	8,132	20.7
	Av. 1951-55	17,007	19.9	8,038	18.0	8,969	21.9
	1956	17,393	19.7	8,251	18.0	9,142	21.7
	1957	17,178	19.5	8,175	17.9	9,003	21.3
	1958	17,360	19.6	8,100	17.6	9,260	21.7
Alberta.....	Av. 1931-40	10,668	14.0	5,004	12.1	5,665	16.2
	Av. 1941-45	12,490	15.7	5,823	13.7	6,668	18.0
	Av. 1946-50	17,476	20.4	8,295	18.4	9,181	22.6
	Av. 1951-55	23,560	23.2	11,271	21.2	12,289	25.4
	1956	27,165	24.2	13,069	22.3	14,096	26.2
	1957	27,463	23.7	13,153	21.7	14,310	25.8
	1958	28,605	23.8	13,746	22.0	14,859	25.8
British Columbia.....	Av. 1931-40	4,035	5.4	1,338	3.3	2,697	7.9
	Av. 1941-45	8,337	9.3	3,241	6.9	5,096	12.0
	Av. 1946-50	14,867	13.8	6,368	11.4	8,499	16.4
	Av. 1951-55	19,114	15.3	8,474	13.2	10,640	17.5
	1956	22,826	16.3	10,183	14.1	12,643	18.6
	1957	25,033	16.9	11,145	14.5	13,888	19.3
	1958	25,836	16.7	11,689	14.7	14,147	18.9
Yukon.....	Av. 1951-55	323	33.6	144	25.2	179	45.6
	1956	396	33.0	200	29.0	196	37.0
	1957	401	33.4	195	28.7	206	39.6
	1958	381	29.3	184	25.2	197	34.6
Northwest Territories.....	Av. 1951-55	382	23.0	196	20.8	186	25.9
	1956	494	26.0	236	21.1	258	31.9
	1957	575	30.3	255	23.5	317	39.6
	1958	612	30.6	308	26.8	304	35.8
Canada ¹	Av. 1931-40	122,002	11.2	59,308	10.6	62,694	11.9
	Av. 1941-45	161,688	13.7	78,501	13.0	83,187	14.5
	Av. 1946-50	234,999	18.1	114,560	17.4	120,439	18.9
	Av. 1951-55	289,668	19.5	140,906	18.7	148,762	20.3
	1956	318,778	19.8	155,121	19.0	163,657	20.6
	1957	332,514	20.1	161,173	19.2	171,341	21.0
	1958	334,917	19.7	162,530	18.8	172,387	20.5

¹ Figures for Newfoundland are included from 1949 and those for the Yukon and Northwest Territories from 1950.

BIRTH, DEATH AND NATURAL INCREASE RATES

RATE PER 1,000
POPULATION

RATE PER 1,000
POPULATION



Natural Increase in Urban Centres.—The classification of births and deaths by place of residence makes it possible to compile the natural increase in the population of urban centres; the figures are presented in Table 2, pp. 238-240.

Section 5.—Marriages and Divorces

Subsection 1.—Marriages*

In 1958 Canada's marriage rate was 7.7 per 1,000 population, the lowest in twenty years. Provincial rates varied from 6.2 per 1,000 population for Prince Edward Island to 8.5 for Alberta but in every province the 1958 rate was below the corresponding rate for 1957. Table 19 shows the number of marriages and the marriage rates per 1,000 population for Canada and the provinces, and percentages of brides and bridegrooms, according to place of birth. For the country as a whole, almost 80 p.c. of the grooms of 1958 were born in Canada and 65 p.c. in the province in which they were married; over 83 p.c. of the brides were born in Canada and 72 p.c. in the province in which they were married. However, as would be expected because of heavy immigration of young persons in the postwar years, an increasing number of marriages are of persons born outside the country. For example, 20.1 p.c. of the grooms married in 1958 were born outside Canada compared with 11.7 p.c. in 1941; for brides the percentages were 16.5 and 8.4 p.c., respectively. However there are wide variations in this pattern as between provinces; in the older Atlantic Provinces and Quebec there is a greater tendency than in the other provinces to marry native Canadians. In these areas both partners in a marriage are often born in the same province.

* For international comparisons, see Section 7, pp. 267-268.

19.—Marriages and Rates per 1,000 Population, by Province, with Percentage Distribution of Bridegrooms and Brides by Nativity, 1931-58

Province and Year	Total Marriages	Rate per 1,000 Population	Born in Province Where Married		Born in Other Provinces		Born Outside Canada	
			Grooms	Brides	Grooms	Brides	Grooms	Brides
	No.		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Newfoundland.....1951	2,517	7.0	85.2	96.7	2.4	1.9	12.4	1.4
1956	3,073	7.4	84.3	96.4	3.3	1.6	12.4	2.0
1957	3,041	7.1	84.4	96.7	3.6	1.2	12.0	2.1
1958	3,047	7.0	87.8	97.7	2.1	1.0	10.2	1.3
Prince Edward Island.....1931	490	5.6	89.4	91.8	5.1	4.1	5.5	4.1
1941	673	7.1	78.8	86.6	15.0	9.4	6.2	4.0
1951	583	5.9	82.3	91.1	12.9	6.0	4.8	2.9
1956	649	6.6	80.7	92.8	14.8	4.8	4.5	2.5
1957	627	6.3	81.7	93.6	13.7	4.5	4.6	1.9
1958	619	6.2	77.7	93.7	16.8	4.8	5.5	1.5
Nova Scotia.....1931	3,394	6.6	80.3	86.7	5.4	3.6	14.3	9.7
1941	6,596	11.4	73.2	83.8	16.8	9.5	10.0	6.7
1951	5,094	7.9	78.2	86.7	15.9	9.0	6.0	4.3
1956	5,543	8.0	74.8	88.1	18.9	9.1	6.4	2.9
1957	5,206	7.4	75.7	87.3	18.8	8.9	5.5	3.8
1958	5,135	7.2	73.9	87.2	20.1	9.2	5.9	3.7
New Brunswick.....1931	2,544	6.2	77.7	81.8	10.1	9.2	12.2	9.0
1941	4,941	10.8	78.5	84.4	13.3	9.7	8.2	5.9
1951	4,386	8.5	80.0	86.9	10.1	6.7	9.8	6.4
1956	4,591	8.3	75.9	86.8	12.2	6.3	11.9	6.9
1957	4,284	7.6	77.0	86.9	11.7	6.3	11.2	6.8
1958	4,170	7.2	74.9	85.8	12.9	7.2	12.2	7.1

19.—Marriages and Rates per 1,000 Population, by Province, with Percentage Distribution of Bridegrooms and Brides by Nativity, 1931-58—concluded

Province or Territory and Year	Total Marriages	Rate per 1,000 Population	Born in Province Where Married		Born in Other Provinces		Born Outside Canada	
			Grooms	Brides	Grooms	Brides	Grooms	Brides
	No.		p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Quebec.....1931	16,783	5.8	79.7	83.4	4.2	3.7	16.0	13.0
1941	32,782	9.8	86.1	89.3	6.7	5.9	7.2	4.8
1951	35,704	8.8	86.7	89.5	6.1	5.5	7.2	5.0
1956	37,290	8.1	85.6	88.8	5.7	5.0	8.7	6.2
1957	37,135	7.8	84.0	87.2	5.8	4.9	10.2	7.8
1958	36,229	7.4	83.0	86.1	5.5	4.7	11.5	9.2
Ontario.....1931	23,771	6.9	57.4	63.4	7.7	7.7	34.9	28.8
1941	43,270	11.4	89.2	89.0	4.2	4.5	6.7	6.5
1951	45,198	9.8	65.9	72.4	14.6	12.2	19.5	15.4
1956	46,282	8.6	61.9	68.1	14.0	12.2	24.2	19.8
1957	46,780	8.3	59.7	65.7	13.4	11.7	26.8	22.6
1958	46,894	8.1	58.2	64.0	13.4	11.3	28.4	24.8
Manitoba.....1931	4,888	7.0	41.6	55.7	10.9	9.2	47.5	35.1
1941	8,305	11.4	63.0	73.7	17.4	15.0	19.6	11.4
1951	7,366	9.5	67.9	75.1	15.4	13.3	16.8	11.6
1956	6,709	7.9	64.7	74.9	19.7	14.4	15.6	10.7
1957	6,594	7.7	65.3	75.4	18.8	12.8	15.9	11.8
1958	6,430	7.4	65.1	74.9	18.2	12.9	16.7	12.2
Saskatchewan.....1931	5,700	6.2	27.6	48.3	22.5	16.9	49.9	34.7
1941	7,036	7.9	64.7	79.1	16.1	10.0	19.1	10.9
1951	6,805	8.2	78.3	86.4	10.7	6.4	11.1	7.2
1956	6,403	7.3	76.5	87.9	13.7	5.4	9.8	6.7
1957	6,510	7.4	76.4	86.8	13.2	6.5	10.4	6.7
1958	6,464	7.3	78.5	86.6	11.7	6.6	9.8	6.9
Alberta.....1931	5,142	7.0	22.1	38.5	19.4	17.6	58.5	43.9
1941	8,470	10.6	50.0	63.4	23.9	19.9	26.2	16.8
1951	9,305	9.9	56.0	67.4	25.7	19.6	18.3	13.0
1956	9,965	8.9	53.7	63.9	25.9	20.6	20.4	15.5
1957	10,117	8.7	52.9	62.8	26.1	20.6	21.0	16.5
1958	10,186	8.5	52.5	61.2	25.2	20.9	22.3	17.9
British Columbia.....1931	3,879	5.6	22.2	30.6	21.1	24.7	56.7	44.7
1941	9,769	11.9	35.9	43.5	35.6	37.1	28.5	19.4
1951	11,272	9.7	35.5	41.6	43.1	43.0	21.3	15.5
1956	11,950	8.5	33.7	41.2	40.9	38.9	25.4	19.9
1957	12,620	8.5	32.3	39.2	39.3	37.5	28.4	23.3
1958	12,094	7.8	32.6	39.9	36.7	34.6	30.7	25.4
Yukon.....1956	112	9.3	17.0	25.0	58.0	58.0	25.0	17.0
1957	110	9.2	14.5	22.7	66.4	67.3	19.1	10.0
1958	109	8.4	11.9	19.3	74.3	68.8	13.8	11.9
Northwest Territories.....1956	146	7.7	65.1	73.3	19.9	19.2	15.1	7.5
1957	162	8.5	64.2	72.8	26.5	19.8	9.3	7.4
1958	148	7.4	66.9	70.3	21.6	20.3	11.5	9.5
Canada ¹.....1931	66,591	6.4	56.7	64.9	10.0	9.2	33.3	26.0
1941	121,842	10.6	76.8	81.5	11.4	10.1	11.7	8.4
1951	128,230	9.2	70.5	76.5	15.1	12.8	14.5	10.6
1956	132,713	8.3	67.8	74.7	15.2	12.4	17.0	12.9
1957	133,186	8.0	66.3	72.8	15.0	12.2	18.7	14.9
1958	131,525	7.7	65.4	71.8	14.5	11.8	20.1	16.5

¹ Newfoundland included from 1951 and the Yukon and Northwest Territories from 1956.

Age and Marital Status of Brides and Bridegrooms.—Table 20 shows that almost 92 p.c. of the marriages in 1958 were between persons who had not been married previously; 4.5 p.c. of both brides and bridegrooms had been widowed, and almost 4 p.c. of the marriages were of divorced persons. The average age at marriage of bachelors was 26 years and that of spinsters 23 years, two and a half months. The average age of widowers and widows at time of remarriage was slightly more than double that of bachelors and spinsters. Over 91 p.c. of the spinsters married in 1958 were under 30 years of age, 33 p.c. were under 20 years and nearly 45 p.c. were between 20 and 25. Over 83 p.c. of the bachelors were under 30 years of age, 7 p.c. of them under 20 and over 48 p.c. from 20 to 24 years of age.

In recent years, couples have been marrying younger than they did a generation ago. Since 1940 the average age of men at the time of their first marriage has dropped from 28 years to 26; that of girls from 24 years and eight months to 23 years and two months.

20.—Brides and Bridegrooms, by Age and Marital Status, 1958

Age Group	BRIDES							
	Numbers				Percentages			
	Spinsters	Widows	Divorced	Total	Spinsters	Widows	Divorced	Total
Under 20 years.....	40,034	19	31	40,084	33.3	0.3	0.6	30.5
20 — 24 ".....	53,567	177	507	54,251	44.5	2.8	10.2	41.2
25 — 29 ".....	16,353	391	1,160	17,904	13.6	6.3	23.3	13.6
30 — 34 ".....	5,381	524	1,069	6,974	4.5	8.4	21.4	5.3
35 — 39 ".....	2,407	652	922	3,981	2.0	10.5	18.5	3.0
40 — 44 ".....	1,131	728	586	2,445	0.9	11.7	11.8	1.9
45 — 49 ".....	699	847	388	1,934	0.6	13.6	7.8	1.5
50 — 54 ".....	370	771	204	1,345	0.3	12.4	4.1	1.0
55 — 59 ".....	193	700	78	971	0.2	11.2	1.6	0.7
60 — 64 ".....	97	622	25	744	0.1	10.0	0.5	0.6
65 years or over.....	78	797	15	890	0.1	12.8	0.3	0.7
Age not stated.....	2	—	—	2	—	—	—	—
Totals, All Ages.....	120,312	6,228	4,985	131,525	91.5	4.7	3.8	100.0
Average ages.....	23.2	48.7	35.0	24.8	...	...	...	...

	BRIDEGROOMS							
	Numbers				Percentages			
	Bachelors	Widowers	Divorced	Total	Bachelors	Widowers	Divorced	Total
Under 20 years.....	8,408	—	1	8,409	7.0	—	—	6.4
20 — 24 ".....	58,820	44	177	59,041	48.6	0.8	3.6	44.9
25 — 29 ".....	34,039	137	867	35,043	28.1	2.4	17.8	26.6
30 — 34 ".....	11,265	264	1,045	12,574	9.3	4.6	21.4	9.6
35 — 39 ".....	4,233	356	910	5,499	3.5	6.3	18.7	4.2
40 — 44 ".....	1,819	484	703	3,006	1.5	8.5	14.4	2.3
45 — 49 ".....	1,030	546	528	2,104	0.9	9.6	10.8	1.6
50 — 54 ".....	588	682	319	1,589	0.5	12.0	6.5	1.2
55 — 59 ".....	366	794	192	1,352	0.3	13.9	3.9	1.0
60 — 64 ".....	208	744	79	1,031	0.2	13.1	1.6	0.8
65 years or over.....	177	1,645	51	1,873	0.1	28.9	1.0	1.4
Age not stated.....	4	—	—	4	—	—	—	—
Totals, All Ages.....	120,957	5,696	4,872	131,525	92.0	4.3	3.7	100.0
Average ages.....	26.0	55.5	38.4	27.8	...	...	...	...

Religious Denominations of Brides and Bridegrooms.—The distribution of brides and bridegrooms by religious denominations is roughly the same as that for the population as a whole. Table 21 shows the very strong influence that religion has on marriage. About 72 p.c. of all marriages are between persons of the same religious denomination; in 1958 among those of Jewish faith it was about 93 p.c.; among Roman Catholics 88 p.c.; United Church about 62 p.c.; and Eastern Orthodox about 68 p.c.

21.—Marriages by Religious Denominations of Contracting Parties, 1958

Denomination of Bridegroom	Denomination of Bride										Total Marriages	P.C. of Grooms
	Angli- can	Bap- tist	East- ern Ortho- dox	Jew- ish	Luth- eran	Pres- byter- ian	Roman Cath- olic ¹	United Church	Other Sects	Not Stated		
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	
Anglican.....	7,726	571	100	17	425	772	1,895	3,443	561	4	15,514	11.8
Baptist.....	589	2,051	17	2	125	183	449	920	285	1	4,622	3.5
Eastern Orthodox...	132	28	1,682	4	79	28	386	204	61	—	2,604	2.0
Jewish.....	30	2	1	1,483	10	10	60	25	18	—	1,639	1.2
Lutheran.....	537	149	48	2	2,892	186	875	907	297	3	5,896	4.5
Presbyterian.....	887	220	33	5	162	2,017	570	1,119	184	—	5,197	4.0
Roman Catholic.....	1,797	352	229	26	904	560	54,814	2,223	938	1	61,844	47.0
United Church.....	3,157	784	154	12	707	976	2,248	15,046	861	2	23,947	18.2
Other.....	706	311	54	9	284	207	1,017	6,550	6	2	10,241	7.8
Not stated.....	7	1	—	—	2	—	3	5	1	2	21	—
Totals.....	15,568	4,469	2,318	1,560	5,590	4,939	62,317	24,993	9,756	15	131,525	100.0
P.C. of brides.....	11.8	3.4	1.8	1.2	4.3	3.8	47.4	19.0	7.4	—	100.0	71.7 ²

¹ Includes Greek Catholics.
denomination.

² Percentage of marriages between contracting parties of the same religious

Subsection 2.—Dissolutions of Marriage (Divorces)

Before World War I the number of divorces granted in Canada was very small. There were fewer than 20 divorces each year from Confederation to 1900, 21 in 1903, 51 in 1909 and 60 in 1913. These numbers represent less than one per 1,000 of the yearly number of marriages. At the end of World War I the number of divorces showed a definite increase, advancing to a peak of 8,199 in 1947, then declining gradually to a postwar low of 5,270 in 1951. From 1952 to 1958 the number has fluctuated between 5,650 and 6,688.

22.—Dissolutions of Marriage (Divorces), by Province, 1931-58

NOTE.—Figures for individual years from 1900 to 1950 are given in the 1956 Year Book, p. 230.

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Av. 1931-35.....	..	1	37	22	31	320	119	61	168	280	1,038
" 1936-40.....	..	1	50	44	56	734	194	116	259	570	2,024
" 1941-45.....	..	2	92	104	99	1,398	305	207	432	937	3,576
" 1946-50.....	1	21	185	245	303	2,839	500	383	724	1,676	6,877
1951.....	4	10	187	156	289	2,109	361	226	589	1,339	5,270
1952.....	3	9	188	200	309	2,218	338	223	630	1,532	5,650
1953.....	9	15	185	181	273	2,824	374	218	603	1,478	6,160
1954.....	8	8	249	117	370	2,469	371	250	610	1,471	5,923
1955.....	1	7	253	181	396	2,531	337	237	627	1,483	6,053
1956.....	5	1	230	215	351	2,478	314	221	685	1,502	6,002
1957.....	6	2	250	206	519	2,873	305	242	726	1,559	6,688
1958.....	7	1	220	150	311	2,776	292	281	743	1,498	6,279

Section 6.—Canadian Life Tables

Four official series of life tables for Canada and the provinces and regions have been published to date, based on deaths in the three-year period around each of the Censuses of 1931, 1941, 1951 and 1956. In addition, tables have been computed for Canada as a whole for the years 1945 and 1947 based on estimated populations by sex and age and the deaths recorded in those years. The life table values for 1956 are given in abbreviated form in Table 23.

Life tables give a summary of the health and general conditions of survival of the population in a conventional, standard form. A hypothetical number (100,000) of births of each sex is assumed as a starting point. The life tables show how, on the basis of the mortality rates at each age in the given years, these 100,000 of each sex are reduced in number by death. For example, during the year 1956, of 100,000 males born, 3,472 died in their first year so that 96,528 survived to one year of age; 241 died in their second year so that 96,287 survived to two years of age, and so on. At 100 years of age only 87 of the original 100,000 would have survived. The probability of death at each age is the ratio between the number of deaths and the population at each age. Finally, the expectation of life is the average number of years which a person might expect to live if the mortality rates in the given years remained constant.

Mortality rates at all ages for males have been almost consistently higher than for females. Males have the highest risk of mortality as compared with females during their first year of life, from their late 'teens to early 30's and from age 50 to 65. For both boys and girls the risk of mortality drops rapidly during childhood and is lowest at about age 10, increases gradually to about age 40 for males and about 50 for females and then rises steeply with advancing age. At the mortality rates given in the 1956 Life Table (see Table 23) about 13,000 males would have died before reaching age 50 as compared with about 8,700 females; only 56,466 of the original group of 100,000 males would have survived to age 70 as compared with about 70,327 females.

By 1956, life expectancy at birth in Canada had reached a new high record of 67.6 years for males and 72.9 for females—comparable to the expectancy for other countries of the world with highly developed programs of medical and public health care. Once a child has passed its first year of life, however, its life expectancy increases appreciably. At one year of age a male child at present mortality risks may, on the average, expect to live an additional 69.0 years and a female 74.0 years, representing for an infant boy a gain of 1.4 years more than his expectation at birth and 1.1 years more for an infant girl. The expectation of life of a 15-year-old boy is 55.9 more years; of a 15-year-old girl 60.6 years. At 25 years of age the expectation is about 46.6 years for men and almost 51 years for women and at age 70, 10.5 years for men and 12.2 years for women.

23.—Canadian Life Table, 1956

Age	Males				Females			
	Number Living at Each Age	Number Dying Between Each Age and the Next	Probability of Dying Before Reaching Next Birthday	Expectation of Life	Number Living at Each Age	Number Dying Between Each Age and the Next	Probability of Dying Before Reaching Next Birthday	Expectation of Life
At birth.....	100,000		.03472	67.61	100,000		.02767	72.92
1 year.....	96,528	3,472	.00250	69.04	97,233	2,767	.00216	73.99
2 years.....	96,287	241	.00144	68.21	97,023	210	.00120	73.15
3 ".....	96,148	139	.00115	67.31	96,907	116	.00093	72.24
4 ".....	96,037	111	.00095	66.38	96,817	90	.00070	71.31
5 ".....	95,946	91	.00083	65.45	96,749	68	.00058	70.35

23.—Canadian Life Table, 1956—concluded

Age	Males				Females			
	Number Living at Each Age	Number Dying Between Each Age and the Next	Probability of Dying Before Reaching Next Birthday	Expectation of Life	Number Living at Each Age	Number Dying Between Each Age and the Next	Probability of Dying Before Reaching Next Birthday	Expectation of Life
10 years.....	95,611	335	.00057	60.67	96,522	227	.00037	65.51
15 ".....	95,297	314	.00099	55.86	96,330	192	.00047	60.64
20 ".....	94,699	598	.00160	51.19	96,074	256	.00060	55.80
25 ".....	93,897	802	.00169	46.61	95,762	312	.00075	50.97
30 ".....	93,116	781	.00172	41.98	95,366	396	.00094	46.17
35 ".....	92,272	844	.00202	37.34	94,868	498	.00127	41.40
40 ".....	91,217	1,055	.00288	32.74	94,157	711	.00194	36.69
45 ".....	89,620	1,597	.00472	28.28	93,052	1,105	.00312	32.09
50 ".....	87,015	2,605	.00794	24.04	91,321	1,731	.00475	27.65
55 ".....	82,853	4,162	.01282	20.12	88,746	2,575	.00744	23.38
60 ".....	76,601	6,252	.02037	16.54	84,791	3,955	.01191	19.34
65 ".....	67,737	8,864	.03057	13.36	78,849	5,942	.01864	15.60
70 ".....	56,466	11,271	.04425	10.51	70,327	8,522	.02955	12.17
75 ".....	43,106	13,360	.06776	7.98	58,224	12,103	.05137	9.15
80 ".....	28,117	14,989	.10611	5.89	41,683	16,541	.08717	6.75
85 ".....	14,252	13,865	.16187	4.27	23,817	17,866	.13640	4.97
90 ".....	4,944	9,308	.23784	3.07	9,930	13,887	.19889	3.67
95 ".....	984	3,960	.33684	2.18	2,716	7,214	.27446	2.74
100 ".....	87	897	.46169	1.52	427	2,289	.36294	2.05

Table 24 summarizes the life expectancy figures extracted from the Canadian Life Tables for 1931, 1941, 1951 and 1956. Life expectancy at birth increased for men from 60 years in 1931 to over 67.6 in 1956 and for women from 62.1 years to 72.9 during the same period. This is a gain for males of 1.3 years since 1951 compared with gains of 3 and 3.3 years in the previous decades; females gained 2.1 years since 1951 compared with 4.2 and 4.5 years in the preceding decades. Thus, since 1931 a total of 7.6 years has been added to male life expectancy and 10.8 years to female longevity.

The increases in life expectancy have been predominantly at the younger ages, particularly in infancy, and diminish with advanced age. For example, since 1931, 3.2 years have been added to the life expectancy of a five-year-old male, 2.1 years to a 20-year-old, over eight months to a 40-year-old and just over two months to a 60-year-old as compared with 7.6 years for a newborn male. During this period, life expectancy for a five-year-old female gained 7.2 years, for a 20-year-old 6.0 years, for a 40-year-old 3.7 years and for a 60-year-old 2.1 years as compared with 10.8 years for a newborn female.

Longevity has improved for both sexes, though more so and at all ages for females, but there has been only slight improvement for males beyond middle life. Briefly, the rapid decline in the death rate for infants of both sexes is continuing but the declines are slower with advancing age, so that relatively stationary death rates have been established from about 50 years onwards for males and from about 80 for females.

The fact that such a pattern exists is important in interpreting the results of these life tables. The arbitrary population base of 100,000 of each sex in the tables has been subjected to the mortality rates in effect in 1955-57, and the life expectancy computed as if those death rates at each age were to prevail during their lifetime. Actually the theoretical 200,000 infants born in 1955-57 will most probably have a pattern of survival and life expectancy quite different from that of the present life table as they will spend most of their lives under conditions of public health and medical care which in all likelihood will be superior to those prevailing in 1955-57.

The improvement in life expectancy, particularly among children and adolescents, is caused mainly by the substantial reduction in recent years in mortality from infectious diseases; on the other hand, diseases associated with middle and old age are much less amenable to control. It is therefore unlikely that improvement in life expectancy in the future will be comparable to that of the past quarter-century. As approximately 11 p.c. of deaths in 1955-57 occurred among infants and an additional 75 p.c. among persons over age 50, any additional improvement must come as the result of further declines in mortality from conditions associated with childbirth and early infancy, further control of infectious diseases, prevention of accidents, and advances in combating diseases associated with middle and old age, such as cardiovascular-renal conditions and cancer.

24.—Expectation of Life 1931, 1941, 1951 and 1956

Age	1931		1941		1951		1956	
	Male	Female	Male	Female	Male	Female	Male	Female
	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.	yrs.
At birth.....	60.00	62.10	62.96	66.30	66.33	70.83	67.61	72.92
1 year.....	64.69	65.71	66.14	68.73	68.33	72.33	69.04	73.99
2 years.....	64.46	65.42	65.62	68.16	67.56	71.55	68.21	73.15
3 ".....	63.84	64.75	64.88	67.38	66.68	70.65	67.31	72.24
4 ".....	63.11	63.99	64.07	66.56	65.79	69.74	66.38	71.31
5 ".....	62.30	63.17	63.22	65.69	64.86	68.80	65.45	70.35
10 ".....	57.96	58.72	58.70	61.08	60.15	64.02	60.67	65.51
15 ".....	53.41	54.15	54.06	56.36	55.39	59.19	55.86	60.64
20 ".....	49.05	49.76	49.57	51.76	50.76	54.41	51.19	55.80
25 ".....	44.83	45.54	45.18	47.26	46.20	49.67	46.61	50.97
30 ".....	40.55	41.38	40.73	42.81	41.60	44.94	41.98	46.17
35 ".....	36.23	37.19	36.26	38.37	37.00	40.24	37.34	41.40
40 ".....	31.98	33.02	31.87	33.99	32.45	35.63	32.74	36.69
45 ".....	27.79	28.87	27.60	29.67	28.05	31.14	28.28	32.09
50 ".....	23.72	24.79	23.49	25.46	23.88	26.80	24.04	27.65
55 ".....	19.88	20.84	19.64	21.42	20.02	22.61	20.12	23.38
60 ".....	16.29	17.15	16.06	17.62	16.49	18.64	16.54	19.34
65 ".....	12.98	13.72	12.81	14.08	13.31	14.97	13.36	15.60
70 ".....	10.06	10.63	9.94	10.93	10.41	11.62	10.51	12.17
75 ".....	7.57	7.98	7.48	8.19	7.89	8.73	7.98	9.15
80 ".....	5.61	5.92	5.54	6.03	5.84	6.38	5.89	6.75
85 ".....	4.10	4.38	4.05	4.35	4.27	4.57	4.27	4.97
90 ".....	2.97	3.24	2.93	3.13	3.10	3.24	3.07	3.67
95 ".....	2.14	2.40	2.09	2.26	2.24	2.27	2.18	2.74
100 ".....	1.53	1.77	1.46	1.64	1.60	1.59	1.52	2.05

Section 7.—International Comparisons of Vital Statistics

Table 25 gives a summary of Canada's national and provincial vital statistics rates along with those of several other countries. It will be noted that among the countries listed the low crude death rate in Canada is bettered by only three countries—Japan, the Netherlands and the Union of Soviet Socialist Republics—and that some of the provinces have lower rates than most other countries. The birth rate also helps to give Canada one of the fastest growing populations, currently ranking sixth among those listed. However, 13 countries reported lower rates of infant mortality.

25.—Principal Vital Statistics Rates of Selected Countries, 1958

NOTE.—Countries are ranked according to the highest rates for births, marriages and natural increase and according to the lowest for deaths.

Source: United Nations publications.

Country or Province	Births		Deaths		Infant Mortality		Neo-natal Mortality ¹		Maternal Mortality		Marriages		Natural Increase	
	Rate ²	Rank	Rate ³	Rank	Rate ³	Rank	Rate ³	Rank	Rate ³	Rank	Rate ³	Rank	Rate ²	Rank
Australia.....	22.6	14	8.5	5	21 ⁴	5	15 ⁴	4	0.64	4	7.5	12	14.1	12
Austria.....	16.9	25	12.2	23	41	17	25	15 ⁴	0.94	4	7.5	12	4.7	29
Belgium.....	17.0	24	12.1	22	31	13	23 ⁶	10	0.87	4	7.7	10	4.9	28
Canada	27.6	6	7.9	4	30	12	19	8	0.6	4	7.7	11	26.7	6
Newfoundland.....	33.8	...	...	...	39	...	...	...	0.9	...	...	...	26.7	...
Prince Edward Island.....	25.8	...	...	...	33	...	...	...	0.4	...	...	...	18.0	...
Nova Scotia.....	26.6	...	8.6	...	29	...	16	...	0.7	...	6.9	...	18.0	...
New Brunswick.....	28.4	...	7.8	...	35	...	19	...	0.5	...	7.2	...	20.6	...
Quebec.....	29.0	...	7.3	...	36	...	23	...	0.7	...	7.4	...	21.7	...
Ontario.....	26.3	...	8.4	...	25	...	18	...	0.5	...	8.1	...	17.9	...
Manitoba.....	24.9	...	8.2	...	30	...	18	...	0.6	...	7.4	...	16.7	...
Saskatchewan.....	26.9	...	7.3	...	26	...	18	...	0.5	...	7.3	...	19.6	...
Alberta.....	30.7	...	6.9	...	25	...	17	...	0.5	...	8.5	...	23.8	...
British Columbia.....	25.6	...	8.9	...	27	...	17	...	0.4	...	7.8	...	16.7	...
Yukon.....	36.4	...	7.1	...	42	...	11	...	...	...	8.4	...	29.3	...
Northwest Territories.....	47.3	...	16.7	...	151	...	63	...	4.2	...	7.4	...	30.6	...
Ceylon.....	36.5 ⁴	4	10.1 ⁴	14	68 ⁴	22	39 ⁴	16	3.7 ⁴	13	6.1	18	26.4 ⁴	4
Chile.....	35.7	5	12.2	23	123	7	36	14	2.86	12	7.5 ⁴	12	23.5	5
Denmark.....	16.5	26	9.2	10	23 ⁴	7	18 ⁴	7	0.4 ⁴	2	7.2	14	7.3	24
England and Wales.....	16.4	27	11.7	19	23	8	16	5	0.4	2	7.5	12	4.7	29
Finland.....	18.5	20	8.9	8	24	8	17 ⁴	6	0.9 ⁴	6	7.2	14	9.6	19
France.....	18.1	21	11.2	18	32	14	19	8	0.6 ⁴	4	7.0	15	6.9	26
Germany, Federal Republic of.....	17.0	24	10.8	17	33	16	25	11	1.3 ⁴	8	9.1	3	6.2	27
India ⁵	23.9	11	11.9	20	100 ⁵	25	...	...	...	...	...	...	12.0	16
Ireland.....	20.9	18	12.0	21	35	15	23	10	1.3 ⁴	8	5.3	20	8.9	21
Italy.....	17.4	23	9.1	9	43	16	26 ⁵	12	1.1 ⁴	7	7.4	13	8.3	22
Japan.....	17.9	22	7.4	23	79 ⁴	23	29 ⁵	13	2.17	11	6.7	16	10.5	18
Mexico.....	44.5	2	12.2	22	17	2	12	1	0.6 ⁴	4	8.2	9	32.3	2
Netherlands.....	21.2	17	7.5	2	2	3	14 ⁴	3	0.47	2	8.0	17	16.3	9
New Zealand.....	25.2	9	8.9	8	19	3	19	8	0.5	3	6.6	17	10.8	17
Northern Ireland.....	21.6	16	10.8	17	28	10	19	8	0.5 ⁴	3	6.7	16	9.2	20
Norway.....	18.1	21	8.9	8	20 ⁴	4	13 ⁶	2	1.4 ¹⁰	9	3.5	21	27.3	3
Peru.....	37.6	3	10.3	16	108 ⁴	27	37 ⁵	15	1.3 ⁴	8	8.3	7	12.9	15
Portugal.....	23.1	13	10.2	15	84	24	26	12	0.5	3	8.0	9	7.2	25
Scotland.....	19.2	19	12.0	21	28	10	19	8	0.87	5	8.4	16	13.1	14
Spain.....	21.8	15	8.7	7	42	18	22 ^{5,10}	9	0.47	2	6.7	16	4.7	29
Sweden.....	14.3	28	9.6	12	16	11	12	1	0.4 ⁴	2	7.7	11	7.9	23
Switzerland.....	17.4	23	9.5	11	22	6	17	6	0.57	5	8.8 ⁴	5	17.1	8
Union of South Africa (Whites).....	25.7	7	8.6	6	29 ⁴	11	19 ⁵	8	0.87	5	12.3 ⁴	1	17.5 ⁴	7
Union of Soviet Socialist Republics.....	25.3 ⁴	8	7.8 ⁴	3	45 ⁴	19	19	8	0.4	2	8.3	1	14.8	10
United States.....	24.3	10	9.5	11	27	9	...	...	1.4 ⁴	9	5.5 ⁴	19	35.8 ⁴	1
Venezuela.....	45.8 ⁴	1	10.0 ⁴	13	67 ⁴	21	...	...	0.37	1	9.2	12	14.4	11
Yugoslavia.....	23.5	12	9.1	9	102 ⁴	26	42 ⁸	17	...	...	...	...	...	...

¹ Under four weeks unless otherwise stated.² Per 1,000 population.³ Per 1,000 live births.⁴ 1957.⁵ Under one month.⁶ 1955.¹⁰ 1953.⁸ 1954.⁹ Registration area only.

CHAPTER VI.—PUBLIC HEALTH, WELFARE AND SOCIAL SECURITY*

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NOTE.—The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Canada's health and welfare services have undergone constant development and expansion during the postwar years. Generally high levels of prosperity, strongly growing trends toward urbanization and new advances in welfare and in health concepts and knowledge have all contributed to their rapid growth.

Preventive, diagnostic and curative health and rehabilitation services as well as welfare services have become available to most areas of the country in some degree. The federal-provincial-municipal partnership in health matters, stimulated and co-ordinated through the National Health Grant Program, now forms a flexible and effective bulwark for the medical and allied professions. On the welfare side, the major federal, federal-provincial and provincial income maintenance programs provide basic protection for the individual against the hazards of age, disability, unemployment or other inability to earn and, at the same time, substantially assist the municipality in providing for persons who would at one time have been a local responsibility. Generally well developed systems of hospitals provide facilities in settled areas of the provinces. The federal Indian and Northern Health Service, through hospitals and nursing stations, brings services to the widely scattered and often nomadic population of the North. Cost to the individual as a barrier to obtaining necessary hospital care is being eliminated through the provincial hospital insurance programs developed under the Hospital Insurance and Diagnostic Services Act of 1957 (see p. 272).

* Except where otherwise indicated, this Chapter, including the special article on pp. 281-290, was prepared by the Research and Statistics Division of the Department of National Health and Welfare, Ottawa.

Development in the sciences related to medicine, improved health services and raised nutritional and other standards have contributed to generally favourable health conditions—to a declining death rate and a longer expectation of life. Progress against the contagious diseases emphasizes the problems presented by chronic illness and the disabilities of persons in the older age groups. Heart and hypertensive disease, arthritis and rheumatism are among the leading causes of disability, though residual disability from stroke, Parkinson's disease, epilepsy and multiple sclerosis also accounts for large numbers of disabled persons. The death rate for lung cancer continues to increase and cause controversy, and mental illness remains a major problem. Accidents, especially traffic accidents, constitute a steady and tragic problem particularly as they affect children. Also, Canada now shares the world-wide concern for the hazards of radiation from medical and industrial causes as well as from fallout.

Progress in the welfare field has also been so substantial as to concentrate emphasis on remaining problems, and some of these are of considerable magnitude. Rapid urbanization, increasing numbers of older persons in the population and large-scale immigration are among the forces requiring new social approaches. On the other hand, the growth of the industrial community in Canada has been associated with a marked improvement in the general standard of living. Higher real income has permitted better levels of nutrition and better housing, and improved working conditions and shorter working hours have benefited the industrial worker. During the past decade, urban technical and health services have been extended to the rural population of the country, so that many of the improvements in the national standard of life are being shared more equally by the urban and rural populations.

PART I.—PUBLIC HEALTH

Section 1.—Federal, Provincial and Local Health Services

Provincial governments bear the major responsibility for health services in Canada, with the municipality often assuming considerable authority over matters delegated to it by provincial legislation. The Federal Government has jurisdiction over a number of health matters and all levels of government are aided and supported by the network of voluntary effort that has developed through the years.

Subsection 1.—Federal Health Activities

The Department of National Health and Welfare is the chief federal agency in health matters, but important treatment programs are also administered by the Departments of Veterans Affairs and National Defence. The Dominion Bureau of Statistics is responsible for the collection, analysis and publication of health statistics, the National Research Council and the Defence Research Board administer medical research programs, and the Department of Agriculture has certain health responsibilities connected with food production.

The Department of National Health and Welfare controls food and drugs (including narcotics), operates quarantine and immigration medical services, carries out international health obligations, and provides health services to Indians, Eskimos and other special groups. It serves in an advisory and co-ordinating capacity to the provinces and administers grants to provincial health and national voluntary agencies. Administration of federal aspects of the Hospital Insurance and National Health Grant Program has become a major activity during the past decade.

The Department advises on the visual eligibility of applicants for blindness allowances and co-operates with the provinces in the provision of surgical or remedial treatment for recipients of the allowances. Under the Public Works Health Act, supervision of health conditions is provided for persons employed on federal public works. Other programs of health or medical supervision and counselling are provided to the federal Civil Service, and to the Department of Transport in all matters pertaining to the safety, health and comfort of aircrew and passengers.

Co-ordination with the provinces on health matters is facilitated by the Dominion Council of Health, the principal advisory agency to the Minister of National Health and Welfare. Its membership includes the Deputy Minister of National Health, who acts as chairman, the chief health officer of each province, and five appointees of the Governor in Council representing the universities, labour, agriculture and French- and English-speaking women's organizations. The Council meets semi-annually. Federal-provincial technical advisory committees of the Council deal with specific aspects of public health.

National Health Grant Program.—The National Health Grant Program, inaugurated in 1948, initially made ten federal grants available to the provinces for the development and strengthening of public health and hospital services. Nine are continuing grants: the Hospital Construction, Professional Training, General Public Health, Public Health Research, Mental Health, Tuberculosis Control, Cancer Control, Venereal Disease Control, and Crippled Children Grants. A Health Survey Grant lapsed in 1953 following completion of provincial health surveys. In 1953, after a review of the first five years of the Program, three new grants were established: Child and Maternal Health, Medical Rehabilitation, and Laboratory and Radiological Services.

In 1958, federal assistance under the Hospital Construction Grant was increased to \$2,000 per hospital bed (whether active treatment, chronic, mental or tuberculosis), double the previous grant for active treatment beds. In addition, funds were made available to meet up to one-third of the cost of approved alterations and renovations to existing facilities, with the provinces at least matching federal contributions. There are also matching requirements under the Cancer and Venereal Disease Grants and in the case of services (as distinct from equipment and training of personnel) in those for Medical Rehabilitation and Laboratory and Radiological Services.

Up to Mar. 31, 1959, aid for construction was approved for 77,053 beds, 10,012 bassinets, 15,493 nurses' beds, 330 interns' beds, and space in community health centres and laboratories exceeding 10,650 bed equivalents. Approximately 23,000 health workers had been trained or were undergoing special training and more than 6,200 health workers had been employed with federal grant assistance.

The proportion of the total grants appropriation paid out to the provinces has increased steadily. Payments in 1958-59 totalled \$45,859,381 or 84 p.c. of the amount available; the average utilization during eleven years of the program was 72 p.c.

1.—Amounts Available and Amounts and Percentages Expended under the National Health Program, by Grant, for the Eleven-Year Period Ended Mar. 31, 1959, and for the Year Ended Mar. 31, 1959.

Grant	1948-59 Period			Year Ended Mar. 31, 1959		
	Amount Available	Amount Expended ¹	Percentage Expended	Amount Available	Amount Expended ¹	Percentage Expended
	\$	\$		\$	\$	
Cancer Control.....	39,466,858	25,742,030	65	3,598,795	3,373,688	93
Crippled Children.....	5,687,830	3,928,109	69	519,898	413,228	79
General Public Health.....	76,036,601	48,837,513	64	8,294,500	7,231,668	87
Health Survey.....	645,180	540,960	83	...	...	...
Hospital Construction.....	118,847,892	101,275,181	85	17,367,320	16,827,224	96
Mental Health.....	67,016,015	49,602,641	74	7,234,868	6,795,471	93
Professional Training.....	5,662,644	5,782,695	102	516,300	617,425	119
Public Health Research.....	4,614,148	3,859,415	83	512,900	464,530	90
Tuberculosis Control.....	44,305,331	41,232,888	93	4,239,531	3,781,532	89
Venereal Disease Control.....	5,450,237	4,704,914	86	518,099	443,181	85
Child and Maternal Health.....	9,500,000	5,543,381	58	2,000,000	1,700,420	85
Laboratory and Radiological Services.....	38,880,300	11,437,977	29	8,294,500	3,514,401	42
Medical Rehabilitation.....	5,500,000	2,343,351	42	1,000,000	691,613	69
Totals.....	421,613,036	304,831,055	72	54,096,711	45,859,381	84

¹ Expenditures may exceed 100 p.c. of amounts available, through transfer of unexpended funds from one grant to another.

In March 1960 the Minister of National Health and Welfare, in testimony before the Special Committee on Estimates of the House of Commons, announced that the amount made available under the General Public Health Grant would be increased by nearly \$5,500,000 and that under the Medical Rehabilitation Grant raised to over \$2,600,000. At the same time he announced that the Laboratory and Radiological Services and Venereal Disease Control Grants would be absorbed into the General Public Health Grant, and the Crippled Children Grant into that for Medical Rehabilitation. The Mental Health Grant would be increased by \$1,500,000 and the grants for Professional Training and Public Health Research to a total of \$1,740,000 each. At the same time the amounts available under the Tuberculosis Control, Cancer Control and Child and Maternal Health Grants would be decreased. This modification of the program was decided upon, after consultation with the provincial health departments and other agencies concerned, because projects formerly dealt with under the Laboratory and Radiological Services Grant are being increasingly included with the hospital insurance schemes and because it was believed that a more effective co-ordination with other local health programs could be achieved if venereal disease problems could be dealt with under the broader terms of reference of the General Public Health Grant. Similarly, it was believed that more flexibility could be given to rehabilitation services under the new arrangement.

Hospital Insurance.—The Hospital Insurance and Diagnostic Services Act of 1957 provides enabling legislation under which federal grants-in-aid are made available to the provinces to assist in operating publicly administered insurance plans for general hospital care. The method of financing and administering plans, as well as the types of service offered above the minimum stipulated in the Act, is a provincial matter.

Under the financial formula, the Federal Government contributes about one-half of the aggregate shareable costs of the hospital insurance plans. In the individual provinces, however, the federal share varies since each participating province receives 25 p.c. of the national per capita cost of hospital services plus 25 p.c. of its own provincial per capita cost, multiplied by the population covered.

The Act enumerates the basic range of services mandatory for any provincial scheme receiving federal support. Each participating province is required to make specified benefits universally available to its population. The total days of care provided may not be limited and must include basic public ward and other in-patient service normally associated with the operation of a hospital, together with certain diagnostic aids for in-patients and, on a permissive basis, for out-patients. Services may be provided in chronic as well as active treatment hospitals, but legislation specifically excludes care in tuberculosis sanatoria, mental hospitals and institutions for custodial care. Capital costs are also specifically excluded from shareable costs. Thus the federal Act is set up to assist in provision of an insurance system for basic general hospital services available under uniform terms and conditions to the entire provincial population. (See also the special article on Hospital Services and Hospital Insurance in Canada, pp. 281-290.)

Food and Drug Control.—The Food and Drugs, Proprietary or Patent Medicine, and Opium and Narcotic Drug Acts govern the safety, purity and quality as well as the labelling and advertising of all foods, drugs, therapeutic devices and cosmetics. Standards of safety and purity are maintained through constant and widespread inspection and laboratory research. In the central Food and Drugs laboratory, standards governing ingredients are formulated and methods of analysis developed. Special research is carried on to establish the safety of new products. Several panels of experts advise on technical and medical problems.

Regulation of the domestic supply of narcotic drugs is maintained through a system of licensed distributors and reports of all stocks subsequently sold or dispensed. Enforcement of the provisions concerning illicit traffic is carried out in collaboration with the Royal Canadian Mounted Police.

Indian and Northern Health Services.—The Department of National Health and Welfare makes available public health, medical and hospital services to about 174,000 Indians and 11,500 Eskimos. The programs relative to Indians and Eskimos are administered by the Directorate of Indian and Northern Health Services in collaboration with the Department of Citizenship and Immigration, and the Department of Northern Affairs and National Resources, respectively.

Services are provided directly to about 2,000 small scattered groups through a network of 17 hospitals, 41 nursing stations and about 80 other health centres staffed by full-time medical officers, graduate nurses, and other health personnel. In areas where departmental staff or facilities are not located, private practitioners and provincial or community health agencies provide care in return for fees for service, payment of per diem rates or through other arrangements. Special emphasis is placed on tuberculosis control through health education, field X-ray surveys, BCG vaccination and early treatment in sanatoria.

Immigrants.—The Department of National Health and Welfare advises on the administration of sections of the Immigration Act dealing with health, and conducts in Canada and other countries the medical examination of applicants for immigration. It also provides care for immigrants who become ill en route to their destination or while awaiting employment. Further assistance in the provision of hospital and medical services is available to indigent immigrants during their first year in Canada, either from the Federal Government or from the province with federal sharing of costs.

As a part of its contribution to World Refugee Year, arrangements were made by Canada for the admission of a number of refugee families with one or more members suffering from tuberculosis.

Quarantine.—Under the authority of the Quarantine Act, all vessels, aircraft and other conveyances together with their crew members and passengers arriving in Canada from foreign countries are inspected by quarantine officers to detect and correct conditions that could lead to the entry and spread of quarantinable diseases in Canada. Fully organized quarantine stations are located at all major seaports and airports.

Under the provisions of the Leprosy Act, modern facilities for the diagnosis and treatment of leprosy are provided at Tracadie, N.B., for the small number of persons in Canada suffering from this disease.

Sick Mariners.—Under the authority of Part V of the Canada Shipping Act, the Department of National Health and Welfare provides prepaid health services for crew members of foreign-going ships arriving in Canada and Canadian coastal vessels in inter-provincial trade; crew members of Canadian fishing and government vessels may participate on an elective basis. Hospital care of crew members resident in any province that has a hospital insurance plan in operation is now the responsibility of the provincial hospital authority concerned. The total number of crew members on vessels paying sick mariners dues in 1958 was about 126,000.

Health Research.—The National Research Council, the Department of National Health and Welfare, the Defence Research Board and the Department of Veterans Affairs all administer grants-in-aid of medical, public health or socio-economic health research. The latter three also conduct intramural research. Federal funds amount to about 50 p.c. of over-all expenditure on medical research in Canada.

The Division of Medical Research of the National Research Council, set up in 1946, offers grants chiefly for fundamental studies in basic medical science. In the year ended Mar. 31, 1960 these totalled about \$1,650,000 with an additional \$300,000 for fellowships and associateships.

The Department of National Health and Welfare supports both intramural and extramural research, chiefly of an applied nature, to an amount of about \$3,500,000 annually. Grant assistance comes from the Public Health Research Grant, with substantial amounts provided from other grants such as those for mental health, cancer

control and general public health. Departmental public health research is conducted in the laboratories of the Food and Drug Directorate, the Laboratory of Hygiene, the Occupational Health Division and the Nutrition Division, as well as by the Epidemiology and Dental Health Divisions. The Research and Statistics Division collects, analyses and evaluates data on health and welfare matters, develops methods to assist in solving technical and administrative problems, and provides research and consultant services to other Divisions of the Department and other agencies in Canada and abroad.

The Defence Research Board carries on intramural research and provides grants-in-aid for investigations related to health problems concerned with national defence.

The Department of Veterans Affairs is concerned primarily with clinical research in its own hospitals, emphasis at the present time being on problems associated with the aging process (see p. 332).

International Health.—Canada has been a signatory to certain international agreements and conventions and is a member of and co-operates with the World Health Organization and other international agencies concerned with health.

To carry out this country's obligations under the International Sanitary Conventions, the Department of National Health and Welfare maintains quarantine measures for ships and aircraft entering Canadian ports and provides accommodation and necessary medical care for persons arriving in Canada who require quarantine.

The Department is responsible for the enforcement of requirements governing the handling and shipping of shellfish under the International Shellfish Agreement between Canada and the United States and, at the request of the International Joint Commission, participates in studies connected with control of pollution of boundary waters between Canada and the United States and with problems caused by atmospheric pollution. Other international health responsibilities include the custody and distribution of biological, vitamin and hormone standards for the World Health Organization, certain duties in connection with the Commission on Narcotic Drugs of the United Nations and the provision of technical assistance to the specialized agencies of the United Nations carrying out programs related to health.

Subsection 2.—Provincial and Local Health Services

Provincial and local health services may be grouped in several broad categories: general public health services, primarily of a preventive nature; services for specific diseases or disabilities combining prevention and treatment; services related to general medical and hospital care; and rehabilitation services for disabled persons.

General Public Health Services.—Provincial and local governments co-operate closely in providing community public health services. The autonomy of the provinces and their social, economic and geographic diversity make for some variety in legislative provisions, in financial arrangements, and in the detailed division of functions between provincial health departments and local and voluntary agencies. Each province, however, offers all or nearly all of a basic range of public health services which includes environmental sanitation, communicable disease control, maternal and child health, occupational health, dental health, health education, nutrition, and public health laboratories.

Environmental Sanitation.—The control of environmental hazards to health, one of the oldest forms of public health activity, is a function of specialized environmental sanitation or public health engineering divisions in each provincial health department. Programs are concerned primarily with the maintenance of safe water supplies, supervision of sewage disposal systems, milk sanitation and control of general sanitary conditions in public areas, the most extensive sanitary facilities being located, of course, in industrial and urban centres. Provincial and municipal sanitary engineers set standards, formulate policies and regulations, and provide technical assistance to local authorities. The intensity of this type of preventive supervision and control varies from province to province and within each province, but basic programs are similar.

Communicable Disease Control.—The control of communicable diseases has been intimately connected with the beginnings and development of public health measures and concepts. Separate divisions of epidemiology or communicable disease control exist in the six larger provinces; in the Atlantic Provinces these functions are handled by a provincial medical health officer. Local health authorities undertake case-finding and diagnostic services in co-operation with public health laboratories, carry out epidemiological investigations and often participate in tuberculosis and venereal disease control measures.

Maternal and Child Health.—Services for mothers and children are largely decentralized through local units and departments, but most provinces maintain separate divisions or employ consultants to promote better standards and to give technical assistance. Public health nurses have a prominent place in this work which may include prenatal education, provision for delivery and care of the newborn in remote areas, home visits, child health clinics and school health services.

Occupational Health.—Services designed to prevent accidents and occupational diseases and to maintain the health of employees are the common concern of provincial health departments, labour departments, workmen's compensation boards, and industry management. Provincial agencies regulate working conditions and offer consultation and educational services to industry. All provinces have on their statute books legislation (Factory Acts, Shop Acts, Mines Acts, Workmen's Compensation Acts) setting health safety standards for employers.

Dental Health.—All provincial health departments have dental health divisions which administer dental programs, varying under local conditions but directed almost entirely to the care of children. Training of dentists in public health, operation of children's preventive and treatment clinics, and health education are being undertaken in all provinces. Water fluoridation projects, involving more than a million people, are in operation in seven provinces.

In four provinces free clinical care is provided for children in remote rural areas by the use of mobile units; another province uses two railway-coach dental clinics to serve remote areas. Locally sponsored plans in which the cost of dental services for children is shared by the local community and the provincial health department are in operation in more than 70 communities in British Columbia; the sponsoring group decides whether registration for treatment is to be free or on the payment of a nominal sum.

Health Education.—In most provinces experience has demonstrated the need for a professional full-time "health educator" as a member of the public health team. Nine provinces have separate divisions or units to co-ordinate the dissemination of health information through all available media.

Nutrition.—Services include technical guidance, education, consultation and research. In some provinces school lunch programs are also sponsored and dietary supplements distributed. Five provinces have special nutrition divisions; elsewhere nutritionists serve in other divisions of the health department.

Public Health Laboratories.—The public health laboratory, an essential facility in the protection of community health and the control of infectious diseases, was one of the earliest provincial services developed to assist local public health departments. Work performed includes bacteriological examination of water, milk and food samples, the examination of specimens for diagnosis of communicable disease and pathological special services. Each province maintains a central public health laboratory and most provinces have established additional branch laboratories. Recent trends in some provinces include efforts to co-ordinate public health and hospital laboratory services, special measures to bring laboratory facilities to rural areas, and devices to reduce the direct cost of clinical laboratory procedures to the individual.

Services for Specific Diseases or Disabilities.—Each province has developed special programs to deal with health problems of particular severity and prevalence, many of which are chronic or long-term in nature. The services and facilities provided to combat such illnesses are generally similar across the country.

Mental Health.—Major developments in provincial mental health programs concern the expanding and modernizing of mental hospitals, the training of various kinds of psychiatric personnel and the extension of community mental health services outside mental institutions. Assistance to patients in securing employment and in social adjustment following discharge from mental hospitals—a relatively new field of rehabilitation—is being promoted by voluntary groups and government agencies in several provinces.

With the exception of the municipally owned local institutions in Nova Scotia and hospitals in Quebec that operate under religious or lay auspices, most mental institutions are administered by provincial authorities. A great part of the cost is borne by the provincial governments, though patients whose relatives can afford to contribute may be charged for care in some provinces. Newfoundland and Saskatchewan provide complete free care; Manitoba assumes a minimum maintenance cost for all patients; in Nova Scotia the provincial hospital gives free care to patients requiring active treatment; and in Ontario and Prince Edward Island mental institution treatment is included in the hospital care insurance plan.

Most public mental institutions provide care and treatment for all types of mental illness; as facilities expand, it is becoming possible to segregate those under intensive treatment from those receiving long-term care. Some provinces maintain separate accommodation for certain categories of the mentally ill. For example, in British Columbia and Alberta, homes for the senile aged are an integral part of the mental institution system. Quebec has separate institutions for epileptics. Seven provinces operate schools for residential treatment and education of mentally defective persons and one of the three other provinces, New Brunswick, enacted legislation in 1958 authorizing the government to support the maintenance of mentally retarded children in approved homes. Increasing numbers of local day classes, usually sponsored by parent organizations, offer training opportunities for mentally deficient children in the community.

As the needs of patients are more fully understood and better methods of treatment develop, the daily routine of the mental patient is becoming less restrictive, as is shown by the increasing number of persons coming voluntarily for treatment. Custodial care and locked doors are giving way to open wards where patients may have unrestricted access to grounds, occupational and recreational areas.

One of the greatest changes in the past decade has been in the extension of community mental health services outside mental institutions. General hospitals have expanded their psychiatric services in both in-patient and out-patient departments. About 30 general hospitals have organized units where psychiatric treatment is provided by professional staffs. Out-patient clinics where mental illness may be treated at an early stage and guidance services given to children and parents also play an important part in the treatment of mental illness outside mental institutions. Fewer than 20 mental health clinics existed in 1948. Groups active in the subsequent large expansion include provincial health departments, municipalities or health units, mental institutions, general and allied special hospitals, school boards and voluntary organizations.

Day and night care centres, another departure from the traditional form of custodial care, developed first in Montreal a decade ago as part of the psychiatric service of two large general hospitals. Similar centres, admitting patients on a nine-to-five basis or in the evening after work, are now conducted at St. John's in Newfoundland, at Toronto and Cobourg in Ontario, and at Burnaby in British Columbia.

Cerebral Palsy.—Cerebral palsied children in most larger cities are able to attend out-patient and training centres, many of which have been organized by parent groups. A number of general and children's hospitals have also established assessment and treatment facilities for cerebral palsied children. Buses to transport children to day centres

and hospital clinics in most communities are provided and operated by local service clubs or provincial crippled children societies. Attendance fees are usually nominal with financial support of the centres coming from local voluntary contributions, provincial governments and federal health grants. Training and employment programs for young adult cerebral palsied persons are also being developed in a few cities.

Tuberculosis.—Despite greatly reduced mortality from tuberculosis and evidence of some lowering in incidence, the number of cases discovered through provincial detection programs indicates that this disease is still a public health problem. Case-finding efforts are being focussed increasingly on selected groups particularly vulnerable to tuberculosis, with diminishing emphasis on mass X-ray surveys and greater attention to tuberculin tests as a means of detecting infected persons. The work of case-finding is supported substantially by voluntary campaigns conducted by the Canadian Tuberculosis Association.

Sanatoria treatment is free in Newfoundland, Nova Scotia, New Brunswick, Manitoba, Saskatchewan and Alberta, and is included in the hospital insurance benefits which came into effect in Ontario and Prince Edward Island. Even in those provinces where a charge for sanatoria care may be made, the amount collected from paying patients is a very small percentage of total costs.

The number of beds set up in sanatoria and in tuberculosis units of general hospitals declined from a peak of 18,977 in 1953 to 14,655 in 1958. This decline in bed use has resulted from such factors as a decrease in the number of admissions, detection of cases in earlier stages of the disease, and improved treatment methods by drugs and surgery. Provision has been made in several provinces to furnish drugs for home treatment. Facilities for the vocational rehabilitation of discharged patients have been developed in all provinces, and increasing numbers are being re-established in suitable employment.

Cancer.—Health departments and lay and professional groups working for the control of cancer have been concerned mainly with four aspects of the problem—diagnosis, treatment, research and public education. In the detection and treatment of cancer, specialized medicine, hospital services and an expanding public health program are closely related. There are programs operating under health departments in four provinces; an equal number have provincially supported cancer agencies or commissions. These sponsor the work of diagnosis and treatment in special clinics located usually within the larger general hospitals. Under the provincial hospital insurance plans, the benefits pertaining to in-patient care in the treatment of cancer are essentially similar in nine provinces and include such special services as diagnostic radiology, laboratory tests and radiotherapy. In at least five provinces these benefits also apply to out-patients. In others, the previous pattern of services to out-patients—that of assessing costs of treatment in relation to ability to pay—is still in effect. Comprehensive free medical programs for cancer patients, which have long operated in Saskatchewan and Alberta, continue unchanged.

Poliomyelitis.—Through agreements with the Federal Government, all provincial health departments have made Salk vaccine available for free inoculation of children and are encouraging older age groups to avail themselves of the protection of this vaccine. During 1959, the incidence of paralytic poliomyelitis rose in all provinces to its highest level since vaccination began, while the national total was the second largest in the previous ten years. By far the greatest proportion of cases occurred among unvaccinated persons. Very few who had received the prescribed number of inoculations contracted the disease.

Previously existing programs offering free standard ward hospital care to poliomyelitis patients have now become incorporated in the federal-provincial hospital insurance schemes. In the provision of restorative services through remedial surgery, physiotherapy and hydrotherapy and the aid of prosthetic appliances, both provincial departments of health and voluntary societies have a part. Post-poliomyelitic patients may receive vocational training under provincial rehabilitation schemes; boards of education operate special classes for physically handicapped children.

Venereal Disease.—Free diagnostic and treatment services are available in all provinces but the operation of government clinics is being increasingly superseded by the method of supplying free drugs to private physicians who are reimbursed for treatment of indigents on a fee-for-service basis.

Alcoholism.—Ontario, Manitoba, Alberta and British Columbia carry out research and education programs and operate centres for treatment, supported largely by public funds. Ontario, Saskatchewan and Alberta also have rehabilitation programs for alcoholic inmates of reform institutions. Recent legislation in Newfoundland and Nova Scotia authorizes the setting up of similar agencies to initiate research and education studies.

Other Diseases or Disabilities.—Services for a number of chronic disabilities, such as heart disease, arthritis, diabetes, visual and auditory impairments and paraplegia, have been developed largely by voluntary agencies, assisted by federal and provincial funds. A brief description of the programs of some of these agencies is given in Part III, which deals with national voluntary health and welfare activities.

General Medical and Hospital Care.—*Public Medical Care.*—Public medical care programs for the general population exist in three provinces, but are limited to residents of particular areas. Approximately one-half of Newfoundland's population receive physician's services at home or in hospital under the provincially administered Cottage Hospital Plan which is financed in part on a premium basis. Medical indigents not under the Plan may also receive care at provincial expense. In addition, all Newfoundland children under the age of 16 years are entitled to free medical and surgical care in hospital. In Manitoba and Saskatchewan, locally operated municipal-doctor programs cover about 30,000 and 167,000 persons, respectively. The Swift Current Health Region in Saskatchewan operates a comprehensive prepaid medical-dental care scheme for about 50,000 persons. These latter programs are subsidized to some extent by provincial health departments.

Nova Scotia, Ontario, Saskatchewan, Alberta and British Columbia provide health service programs for social assistance recipients, although Nova Scotia covers only mothers' allowance recipients and their dependants, and blindness allowance recipients, and in Saskatchewan, old age assistance recipients are the responsibility of the municipality of residence. Manitoba is introducing services. Indigent persons not covered by these programs, as well as indigents in other provinces, may receive necessary care from the municipality of residence. In general, where costs are assumed by the municipality, there is some form of cost-sharing arrangement with the provincial government.

Under the Ontario program, the major medical services offered are physician's care in the home and office, including certain minor surgical procedures and prenatal and post-natal care. Since Jan. 1, 1959, basic dental care has been available to the children of mothers' allowance recipients. In addition to these medical services, Nova Scotia provides major and minor surgical and obstetrical services and medical attendance in hospital. The programs in Saskatchewan, Alberta and British Columbia give complete medical care in the home, office and hospital, including surgical and obstetrical services, specified prescription drugs (except in Alberta, and with a dollar limitation in Saskatchewan) and dental and optical care, sometimes only on authorization and/or with dollar limits. All of these plans are completely provincially financed, except in British Columbia where costs are shared on a 90-10 basis with the municipalities assuming their share on a proportionate population basis, and in Ontario where per capita contributions towards the cost of medical services for the assistance group are shared on an 80-20 basis with the municipality of residence.

Hospital Care.—The four provinces with hospital insurance plans in operation prior to the passing of the federal Hospital Insurance and Diagnostic Services Act of 1957—Newfoundland, Saskatchewan, Alberta and British Columbia—amended their programs to bring them into conformity with the federal Act from July 1, 1958. Manitoba commenced its plan on the same date. The Nova Scotia and Ontario plans became operative

on Jan. 1, 1959, that of New Brunswick on July 1, 1959 and of Prince Edward Island on Oct. 1, 1959. An agreement was signed with the Northwest Territories in March 1960, to become effective Apr. 1, 1960.

All plans, in conformity with the federal Act, provide in-patient services to all insured residents of the province under uniform terms and conditions. The Act also permits federal sharing in the costs of certain out-patient services; the extent of participation in such services varies from province to province. (See also p. 272 and the special article on Hospital Services and Hospital Insurance in Canada, pp. 281-290.)

Rehabilitation Services.—Expansion of rehabilitation services in all provinces indicates growing success in prevention and control of many disabling conditions, and broader understanding of the needs of handicapped persons. Following the earlier rehabilitation programs organized for injured workers, disabled war veterans and such groups as the blind and the tuberculous, there has been continued progress in the development of services for other disability groups and special medical, vocational, educational and social services for the handicapped. More emphasis is being given to extending comprehensive services to all handicapped, regardless of disability, and to strengthening national, provincial and community bodies concerned with planning and co-ordination. The broadening scope of rehabilitation programs and the movement toward integration of the numerous specialized services are exemplified by the liaison developed between two of the large national voluntary agencies, the Canadian Council for Crippled Children and Adults and the Canadian Foundation for Poliomyelitis and Rehabilitation, as well as by the steady growth of the official provincial rehabilitation programs and the development of co-ordinated community services for the handicapped. Concurrently there has been more attention given to improving treatment and social services for mentally ill persons, mentally retarded children, alcoholics, cerebral palsied children and other disability groups.

Rehabilitation services for persons handicapped by physical or mental defects are organized under voluntary and public auspices as part of general health, welfare or education programs, and also by specialized agencies that provide one or more rehabilitation services. In many of the larger cities, these facilities include hospital physical medicine and rehabilitation departments and special clinics for particular disabilities, separate rehabilitation centres, sheltered workshops, vocational counselling, training and job-placement agencies, and special classes, schools and other combined treatment and education centres for handicapped children. Home care services such as nursing, physical and occupational therapy and housekeeping services, employment of the homebound and recreational services have been started by a few agencies, but their coverage is generally limited.

The main elements of the nation-wide rehabilitation program, introduced in 1953, are supported by joint federal-provincial programs for the co-ordination of rehabilitation services, the vocational training of disabled persons, and the National Health Grants designated for the extension of medical rehabilitation and crippled children's services and for the rehabilitation of the mentally ill or deficient, the tuberculous and other chronically ill. Vocational assessment and counselling of the handicapped is provided by rehabilitation officers attached to the provincial rehabilitation services and by some of the other rehabilitation agencies and centres. Medical rehabilitation services are made available through the provincial public assistance medical care schemes, hospital insurance plans, public health services, the voluntary agencies and various Health Grant projects. The main responsibility for job placement of persons with occupational handicaps is carried by about 140 special placement officers located in the larger National Employment Service offices across the country, although some rehabilitation agencies also do placement work, especially of the severely handicapped. The Federal Government also provides direct services through the programs administered by the Department of Veterans Affairs which operates special centres for the treatment of chronically ill and aging veterans, by the

Department of Citizenship and Immigration for physically and socially handicapped Indians, and by the Department of Northern Affairs and National Resources for the resettlement of Eskimos suffering from disability.

In the year ended Mar. 31, 1959, federal-provincial expenditures, shared under the Co-ordination of Rehabilitation of Disabled Persons Agreements administered by the Department of Labour, increased to \$195,000. The cost of support of 1,174 disabled persons reported as rehabilitated was \$1,232,000 during the year prior to acceptance as compared with estimated annual earnings of \$2,219,300 after placement in jobs. The total vocational training expenditures under the Special Vocational Training Projects Agreements, also a matching grant administered by the Department of Labour, increased to \$533,000 for the training of 1,251 individuals enrolled in a wide range of vocational courses. The number of special placements of handicapped persons who required assistance in finding work decreased to 14,845.

Expenditures on projects under the Medical Rehabilitation Grant and Crippled Children Grant (a portion of these funds being on a matching basis) amounted to \$1,104,840 of the \$1,500,000 available from federal funds in the year ended Mar. 31, 1959. Through the 75 projects approved under these grants, equipment was provided for 35 hospitals and rehabilitation centres, and support was given for the extension of services by 12 rehabilitation centres, 10 hospital centres and clinics, 17 cerebral palsy training centres, six crippled children's services, and by seven of the provincial programs. Other projects supported the full-time professional training of 47 rehabilitation personnel with additional bursaries for short courses, and also the operation of three university schools of physical, occupational and speech therapy.

Subsection 3.—Health Services in the Yukon and Northwest Territories

Health services in the two Territories are operated under conditions considerably different from those in the provinces. Extensive sparsely settled areas, climatic conditions, lack of local government and direct federal administration constitute a basic set of conditions under which health services for both native and white populations, outside the few settled areas, are provided by government agencies or religious organizations. The Yukon Territorial Government, the Northwest Territories Council, the Directorate of Indian and Northern Health Services of the Department of National Health and Welfare, the Department of Northern Affairs and National Resources and the Department of National Defence are all concerned with the provision of services.

Complete health services are supplied to Indians and Eskimos by Indian and Northern Health Services. Particular emphasis is given to tuberculosis, and mass X-ray programs are carried out annually. The Eastern Arctic is served by the annual Eastern Arctic Patrol as well as by medical health officers. In the Western Arctic, medical officers and nursing stations are located at strategic points and a travelling dentist is employed. Persons who cannot be cared for locally are transferred to federal hospitals in the provinces.

In the Yukon Territory, services for the white population are administered through the Commissioner for the Yukon and include complete treatment for tuberculosis and poliomyelitis patients and hospital care for indigent residents. Public health services include communicable disease control, public health nursing, sanitary inspection and tuberculosis case-finding.

The Northwest Territories in March 1960 concluded an agreement with the Federal Government concerning hospital insurance to become effective on Apr. 1, 1960. Health programs for the white population include treatment for tuberculosis and venereal disease as well as dental care for children under 17 years of age and hospital care for the mentally ill. Cancer diagnosis is provided through the Edmonton Clinic. Indigent residents are eligible for medical, dental and optical services as well as for general hospital care.

HOSPITAL SERVICES AND HOSPITAL INSURANCE IN CANADA

The Hospital Insurance and Diagnostic Services Act of 1957 was a notable advance in the development of Canada's social security system. It signified the willingness of the Federal Government to enter into a co-operative program with the provinces to make hospital care available on a prepayment basis to the whole population.

The new legislation has been helpful in many ways. From the viewpoint of the individual sick person it meant prepayment of the bulk of the cost of his hospitalized illness. To the individual hospital it provided a guarantee of stable income and continuing financial support, thus permitting hospital authorities to concentrate more completely on improvement of patient care. To provincial governments it represented a federal undertaking to share the costs of provincially administered hospital insurance schemes.

Hospital Trends

Federal-provincial hospital insurance arrangements are the culmination of a long series of efforts to find a solution to the increasingly complex problems involved in financing hospital care. Rapidly rising operating expenditures and capital costs have in large part resulted from quantitative expansion and qualitative improvement in hospital services and facilities. Medical progress has multiplied the number of services necessary for skilled diagnosis and treatment, has increased the dependence of the physician and the patient on the hospital to provide these services, and has stimulated public demand for more service as well as for a higher level of service.

Utilization.—In 1958, general and allied special hospitals* admitted about 2,500,000 adults and children, recorded 420,000 newborn infants, and provided 31,400,000 days of care to adults, children and the newborn, compared with 20,000,000 days of care only ten years before. In terms of population, the days of care provided to adults and children per thousand persons increased from 1,371 days to an estimated 1,684 days over the ten-year period. As the average length of stay in hospital remained nearly constant at about ten days per patient during this time, it is clear that the increased volume of care per thousand population was caused by an increase in the rate of admission to hospital. Estimated admissions per thousand population increased from 115 in 1948 to 147 in 1958. Taking multiple admissions of the same patient into consideration, it has been estimated that about one of every nine persons was admitted at least once in 1958, compared with one of 12 persons only ten years earlier.

Beds.—A very considerable increase in hospital bed capacity was necessary to make possible the higher volume of care now being provided. From 1948 to 1958, acute treatment rated bed capacity increased by more than 50 p.c. from about 54,000 to 82,000 beds, while the bed-population ratio moved up from 4.2 to 4.8 rated beds per thousand population. The estimated number of chronic-convalescent beds* available more than doubled from 6,700 to 15,000 beds at the end of 1958. The federal Hospital Construction Grant introduced in 1948 has played a major role in stimulating hospital construction, with nearly 50,000 active treatment beds, 8,000 chronic beds, and many other types of beds and special facilities built or under construction by the end of the year 1959. The rapid modernization of Canada's hospital plant is illustrated by the fact that about 45 p.c. of existing bed capacity in general and allied special hospitals has been built during the past ten or eleven years. Nevertheless, even though the over-all ratio had reached 5.7 beds per thousand population at the end of 1958, rapid population growth constantly threatens to outstrip bed expansion in a number of provinces.

Personnel.—The growth of hospital personnel in the postwar "full employment" period has been remarkable in view of the strong competition from other forms of employment. Since 1948, hospital employees in all types of hospitals increased by 88 p.c., from 95,000 to 180,000 in 1958. Hospital employees represented about 2 p.c. of the total civilian labour force in 1948, 2.5 p.c. in 1953, and 3.0 p.c. in 1958. Factors affecting the increase

* Exclusive of mental hospitals, tuberculosis sanatoria and federal hospitals.

of hospital personnel include increases in hospital plant and beds and the volume of patients under care, a progressive reduction of the hospital work-week, and technological changes that have increased the quantity of service rendered to each patient per patient day. Professional and technical personnel to operate the various special services such as clinical laboratories, radiology, electrocardiography, physiotherapy, and so on, have become increasingly significant and essential; even in the nursing group the average number of graduate nurses per hundred patients under care daily rose from 28 to 38 in the period between 1948 and 1958.

Cost of Hospital Care

Both the volume of service rendered (as measured by days of care) and the physical plant (as measured by beds) of general and allied special hospitals have increased by slightly more than 50 p.c. between the years 1948 and 1958. By contrast, annual net operating and capital expenditures have risen by more than 200 p.c. since 1948.

Operating Expenditures.—In 1958, non-federal general and allied special hospitals (exclusive of private hospitals) expended approximately \$450,000,000 on current operations, a ten-year increase of 246 p.c. Over this period, the national average cost per patient day for adults and children increased from \$7.62 to \$17.24, and the national average per capita cost from \$10.19 to \$26.51.

The rise in total operating costs since 1948 may be viewed as the composite result of a number of factors which can be summed up in four groups: economic inflation, total population increase, increased utilization of hospitals per unit of population, and increased quality and quantity of service per patient day. The relative influence of each factor may be gauged by recalculating the 1958 estimated expenditures as if the value of the dollar, total population, and the rate of hospital utilization by that population had remained unchanged throughout the period of comparison. On this basis it has been estimated that general price inflation was responsible for more than two-fifths of the aggregate increase, population growth for about one-quarter, 'internal' factors intrinsic to hospital operation for one-quarter, and increasing utilization rates (days of care per thousand population) for about one-fifteenth.

With regard to 'internal' factors in hospital operation, the greatly increased number of hospital personnel required has tended to make salary levels rise more rapidly than average industrial wages and salaries, thus reducing a long-standing lag. The payroll component of operating expenditures in general and allied special hospitals rose from 48 p.c. of total payrolls in 1948 to 61 p.c. in 1958.

Capital Costs and Construction Grants.—Hospitals represent a major investment in land, buildings and equipment and form an important segment of Canada's 'social' capital; total valuation is broadly estimated as in excess of \$1,500,000,000. Annual construction expenditures reached an estimated \$125,000,000 in the year 1958. For active treatment beds, the estimated average cost per active treatment bed under construction or completed during the year ended Mar. 31, 1959 was \$19,600, approximately double the average cost of construction per bed ten years earlier. Inflation, of course, has been a major factor in the higher costs of construction but the changing nature of the facilities being constructed has also been significant. Whereas ten years ago emphasis was placed on development of small hospitals (relatively low in cost) in rural areas, efforts in recent years have been focussed on the enlargement of existing institutions in urban areas and the development of highly specialized facilities as well as on increasing the number of patient beds.

For capital funds, voluntary hospitals have in the past depended primarily on the benevolence of private groups and individuals, municipal hospitals have been dependent on local taxes, while provincial and federal funds were allocated originally in large part to construction of certain special hospitals operated by these governments. The growing necessity of stimulating and controlling construction of facilities in accordance with social needs led several provinces to introduce capital grants, beginning with Saskatchewan in

1944. These were followed by the federal Hospital Construction Grant in 1948 and its expansion in 1958. The development of provincial hospital insurance schemes has brought about further provincial assistance in some provinces towards capital, interest and depreciation costs.

The federal Hospital Construction Grant Program was launched in 1948 with an allocation of \$13,000,000 a year for project grants to be distributed among the provinces on a population basis. In the fiscal year 1959-60, following several changes through the years, a total of \$25,781,000 was available, including \$17,367,000 as the annual allocation for new construction, plus \$8,413,000 re-voted for projects begun but not completed in previous years. Under a revised program, effective since 1958, the Federal Government may contribute up to \$2,000 for each approved active treatment, chronic-convalescent, mental or tuberculosis bed, every three new bassinets, and for each 300 sq. feet of interior floor space of a community health centre or hospital training facilities. Further payments of \$750 a bed are available for the construction of nurses' residence beds, and for interns' quarters in hospitals. Assistance is provided also for major renovation or alterations to existing facilities. In each instance, the federal grant may not exceed one-third of the total cost of the construction project, and in all cases the province is required to at least match the federal grant.

Development of Hospital Insurance

Until very recent years, the bulk of hospital revenues to meet operating costs was derived from direct payments by patients and their families at the time of hospitalized illness. As costs began to increase (with corresponding increases in difficulty of payment by patients and collections by hospitals) voluntary and commercial organizations established prepayment plans providing for payment from pooled funds set up through regular contributions by participants. These methods helped to lift the financial burden from the insured patient and to stabilize hospital revenues but, despite tremendous growth, failed to protect substantial elements of the population and to fully meet hospital needs during a period of rapidly rising costs.

Maintenance Grants.—Government financial assistance towards hospital operating costs dates from the nineteenth century when local governments were responsible for indigent care under the "Poor Law" tradition. Provincial governments became involved initially on behalf of indigents resident in municipally unorganized territory, and in cases of prolonged illnesses such as mental illness and tuberculosis for which relatively few persons could pay full costs over a long period. In time, various provincial governments began to subsidize hospital care for other specific diseases, to assist directly in paying the costs of care for various indigent groups, and to provide regular maintenance grants to hospitals.

Municipal Prepayment Plans.—Tax-supported hospital insurance schemes began in Canada as a device to supply hospital services in certain sparsely populated rural areas. As far back as 1916 in Saskatchewan and 1919 in Alberta, provincial legislation authorized the formation of inter-municipal hospital districts for the construction and operation of local hospitals; some municipalities commenced immediately to prepay hospital care for resident ratepayers and their dependants, through funds derived from property taxes. Eventually, a number of districts permitted voluntary participation by non-ratepayers through payment of a personal tax for the purchase of "hospital service tickets". By 1946 these local plans served substantial segments of the rural population of Alberta and Saskatchewan.

Newfoundland.—Until the middle 1930's Newfoundland was almost totally lacking hospital services for a large proportion of the island's dispersed population. In 1934, the Cottage Hospital Plan, a combined program of hospital construction and prepaid medical and hospital care, was commenced for outlying areas. Under the Plan, prepayment of

small annual fees by subscribers in cottage hospital districts entitled beneficiaries to out-patient diagnosis and treatment, home visits by the doctor and public ward care in the local hospital or the St. John's General Hospital; residual costs of the government-operated hospitals were met from general tax revenues. By 1958, about one-third of the province's population was covered for a comprehensive range of health services, and about one-half for hospital care under the Cottage Hospital Plan. In addition, the provincial government supplied free medical and hospital care for indigent persons throughout the province, and in 1957 introduced a program of out-patient diagnostic services and public ward hospital care for children under 16 years of age. In 1958, medical and surgical care in hospital was added to the children's program.

Saskatchewan.—Interest in the development of publicly financed province-wide hospital insurance schemes, indicated in the 1930's by health insurance legislation enacted (but not put into effect) by Alberta in 1935 and British Columbia in 1936, was renewed in the early postwar period. Saskatchewan became the first province to adopt a universal coverage hospital care prepayment plan. Under the Saskatchewan Hospitalization Act, enacted in 1946 and implemented on Jan. 1, 1947, municipal plans were replaced by a province-wide scheme financed partly through compulsory personal premiums collected by arrangement with the municipalities, partly through one-third of the proceeds of a 3-p.c. provincial sales tax, and partly from provincial general revenues.

British Columbia.—British Columbia followed Saskatchewan in 1949 with the development of a universal coverage prepayment program financed through premiums collected primarily through a payroll deduction system with rates designed to pay nearly the full cost of the program. Co-insurance charges, payable by the patient at the time of service, were introduced in 1951. Factors such as collection difficulties and the high mobility of the labour force brought about the abolition of premiums in 1954. Provision was made for financing from general revenues, and for this purpose the provincial retail sales tax was increased from 3 p.c. to 5 p.c.

Alberta.—Provincial action in Alberta was more gradual and evolved directly from experience with municipally operated programs. Assistance to municipalities was preceded by several special programs such as hospital care for poliomyelitis patients in 1938, hospital care for cancer diagnosis in 1943, free public ward care for maternity patients in 1944, and a provincial program of health services for selected categories of public assistance recipients in 1947. The province introduced grants-in-aid of municipal prepayment plans for public ward care in 1950; three years later the grants were extended to include 'extra' or special services. By 1957, municipal prepayment districts encompassed approximately 75 p.c. of the population of the province. This scheme provided for a three-way division of costs among the patient, the municipality and the provincial health department. The patient was charged \$1 a day for public ward care and up to \$1 a day for special services, with residual costs shared by the municipality through a compulsory levy on real property and by the province which paid 50 or 60 p.c. of the remainder, as well as statutory grants to hospitals and payments under the special provincial programs. Alberta introduced a new system of province-wide coverage on Apr. 1, 1958.

Recent Developments.—Federal hospital insurance legislation stimulated the further development of provincial hospital insurance schemes. British Columbia, Alberta, Saskatchewan, Manitoba (with a completely new scheme) and Newfoundland (with new province-wide coverage), entered the federal-provincial cost-sharing arrangements on July 1, 1958. Ontario and Nova Scotia commenced provincial hospital insurance schemes on Jan. 1, 1959, New Brunswick on July 1, 1959 and Prince Edward Island on Oct. 1, 1959. It is anticipated that programs in the Northwest Territories and the Yukon will begin sometime during 1960, and Quebec has indicated that steps are under way to implement a program in that province.

Federal Legislation and Provincial Programs

Efforts directed toward the development of a nation-wide plan for hospital insurance have been based on the grant-in-aid approach, rather than on a federally administered program involving an amendment to the British North America Act. The first federal move was made in 1942 when a special inquiry committee to study health insurance was established. After preparing an exhaustive report and drafting legislation, the committee presented its report to Parliament. In 1945 the Federal Government presented the first concrete proposals for a comprehensive nation-wide health insurance program to the Federal-Provincial Post-War Conference on Reconstruction, to be introduced in stages as an integral part of a broader proposal for federal-provincial co-operation. The proposals included (a) general practitioner services, hospital care and visiting nursing services, as a first stage; and (b) other services, including specialist services, laboratory and radiological services, dental care, drugs, etc., at successive later stages. They also included an offer to make available to the provinces a number of grants to strengthen and expand health services. When the conference failed to reach agreement on broader fiscal proposals, the health proposals were not pursued further at that time.

In 1948, the Federal Government established a system of national health grants, which included a grant for hospital construction. Other grants, some of which gave assistance to hospital services, were for health surveys, professional training, public health research, general public health, mental health, tuberculosis control, cancer control, crippled children and venereal disease control. In 1953, grants for child and maternal health, laboratory and radiological services and medical rehabilitation were added. In introducing this program in the House of Commons, the Prime Minister described the grants as "being fundamental prerequisites of a nation-wide system of health insurance".

At the Federal-Provincial Conference of 1955, a request that consideration of health insurance be included on the agenda came from some of the provinces. Early in 1956, the Prime Minister offered a federal program of technical support and financial assistance to provincially administered programs covering hospital care and diagnostic services. Under the terms of the Hospital Insurance and Diagnostic Services Act of 1957, implementation of federal assistance was authorized as soon as a majority of the ten provinces, containing a majority of the population of Canada, had agreed to participate. In the following year, the Act was amended to delete the limiting provision for commencement, so that the five provinces that were prepared to begin could participate in the joint program starting on July 1, 1958. Since then, as already mentioned, four additional provinces have inaugurated programs and joined the federal-provincial arrangements.

Basic Features.—The federal-provincial hospital insurance program is essentially a cost-sharing arrangement designed to provide an orderly prepayment method of meeting the basic costs of care in general and allied special hospitals for all residents of the country.

In order to participate in the program, a province is required to make insured services available to all residents of the province under uniform terms and conditions. Insured services must include specified in-patient services including diagnostic services and, on an optional basis, may include hospital out-patient services. The provinces must undertake to maintain adequate standards of hospital care, to make payments to hospitals on a clearly defined basis, and to maintain adequate records and accounts. In general, however, although the basic content of the program is defined in the federal Act and Regulations, each province decides the form of its own program, including such important aspects as methods of financing the provincial share of costs, details of eligibility for benefits, inclusion of "deterrent" authorized charges to the patient, the pattern of provincial administration, and inclusion of additional benefits and payment of costs not shared by the Federal Government. To provide assurance that provincial arrangements are adequate for control of quality of care and utilization, and for financial control, each participating province must submit a detailed scheme of administration for federal approval as part of the federal-provincial agreement. The agreements are the instruments through which contractual arrangements are made for the payment of federal contributions.

Under federal legislation and regulations, and the contractual agreements, federal financial assistance is given towards the shareable costs of insured in-patient and out-patient services. Excluded from shareable costs are the costs of care for patients in tuberculosis sanatoria, mental hospitals and custodial institutions such as homes for the aged, and capital costs including interest on debt and depreciation allowances. Revenues from services provided to uninsured persons and to insured persons otherwise covered by legislation such as provincial workmen's compensation laws, deterrent 'co-insurance' charges, and a number of other items are deducted. In addition, the Federal Government does not share the costs of provincial administration of hospital insurance.

The total available amount of the federal contribution towards shareable costs is a direct function of actual operating costs in general and allied special hospitals, which makes it an 'open-end' grant without any ceiling. When all provinces are participating, the aggregate federal amount available for all provinces and territories will represent 50 p.c. of the national shareable cost of insured in-patient services made up of shareable costs in ten provinces and two territories, but the actual percentages payable in each participating province will vary from one province to another. Under the formula laid down by the Act, the annual federal contribution for any participating province is the aggregate for that year of 25 p.c. of the national per capita shareable cost of in-patient services (actual costs in participating provinces plus estimated costs in non-participating provinces), plus 25 p.c. of the per capita shareable cost in the province (costs of insured services less deductions for authorized charges to patients), multiplied by the average covered population in the province throughout the year. If a province elects to provide a range of out-patient services, an additional federal contribution is made towards the cost of these services in the same proportion as for in-patient services. Under this method, the Federal Government provides higher per capita assistance to provinces where costs are higher than the national average, but pays more than 50 p.c. of provincial costs to provinces where costs are lower than the national average. Thus, for the year 1959, preliminary estimates indicate that the federal share may vary from 43 p.c. to 62 p.c. of shareable costs because of differences from province to province in the per capita cost of care.

Further federal assistance is available through the National Health Grant Program as well as through the technical and consultant services provided by the Department of National Health and Welfare. In addition to the Hospital Construction Grant for capital development, and the Tuberculosis Control and Mental Health Grants which support projects for expansion of services in these areas, other health grants may be used for hospital research projects, professional training of hospital personnel, and the establishment of provincial technical and consultant services to assist hospitals. These additional sources of assistance reflect the view that attention should be directed toward improving the quality of hospital care.

Methods of Financing.—Hospital insurance distributes the cost of insured services over practically all income earners. With regard to the federal share of the cost, this is accomplished through general revenue financing and the existing federal tax structure. The method by which a provincial hospital insurance plan raises the money to finance its share is entirely a provincial matter, and the diversity of local conditions has called for a variety of arrangements ranging from complete general revenue financing to a complete contributory system.

Four provinces—Newfoundland, Nova Scotia, Alberta and British Columbia—finance their programs in a variety of ways through the general tax system. Nova Scotia has a 3-p.c. hospital tax which is levied as a general sales tax on retail purchases to assist in the financing of the program. British Columbia finances its program mainly from general revenues, with some costs being met by co-insurance charges made by patients at the time of hospitalization. In Alberta, some funds are obtained from municipal tax revenues (3½ mills in 1959) and some from co-insurance charges, but the bulk of the revenue is provided from provincial general revenues. Newfoundland finances its hospital services plan entirely from general revenues.

Five provinces—Saskatchewan, Manitoba, Ontario, New Brunswick and Prince Edward Island—have introduced contributory personal premiums with a multi-rate structure for single persons and families as the principal method of financing the provincial share of hospital insurance costs. Annual premium rates in the year 1959 (or for some provinces beginning in 1960) for single persons were: Saskatchewan, \$17.50; Manitoba, \$24.60; Ontario and New Brunswick, \$25.20; and Prince Edward Island, \$24. For families the rates were: Saskatchewan, family maximum of \$35; Manitoba, \$49.20; Ontario and New Brunswick, \$50.40; and Prince Edward Island, \$48. Premiums are collected through a combination of compulsory payroll deduction and compulsory collection by municipalities in Manitoba and New Brunswick; through compulsory payroll deduction plus voluntary enrolment in Ontario and Prince Edward Island; and through compulsory payments to municipal or provincial offices in Saskatchewan. General provincial revenues are used to supplement this revenue to the extent necessary.

Population Coverage and Eligibility.—The estimated total population coverage in nine participating provinces at the end of the year 1959 was 11,900,000 persons, or about 95 p.c. of the combined population of these provinces. In accordance with the terms of the federal Act, insured services in each participating province must be uniformly available to all residents of the province. The basic objective is universal coverage, but conditions of eligibility for benefits vary from one province to another.

In Newfoundland, Nova Scotia, Alberta and British Columbia, where the programs are financed in a variety of ways through the general tax system, residence in the province is the determining factor in eligibility. All residents of these provinces, apart from a few persons covered under other specified federal or provincial programs, are entitled automatically to hospital insurance coverage. Entitlement is immediate without any waiting period in Alberta and Newfoundland; in British Columbia and Nova Scotia automatic entitlement follows completion of three consecutive months permanent residence in the province. No distinction exists between indigents, public assistance recipients and other beneficiaries in these provinces. Coverage is automatic, compulsory and universal.

In Saskatchewan, Manitoba, Ontario, New Brunswick and Prince Edward Island, eligibility for benefits is dependent upon payment of a premium as well as upon residence requirements. Participation through payment of premiums is compulsory for all residents able to pay in Saskatchewan, Manitoba and New Brunswick. In Ontario and Prince Edward Island, participation is compulsory for residents employed by firms with 15 or more employees, and three or more employees, respectively; enrolment of other residents is on a voluntary basis. The waiting period for benefits following establishment of permanent residence in the province is three months in Saskatchewan, Ontario, New Brunswick and Prince Edward Island, and one month in Manitoba.

In the five premium-paying provinces, special provision exists to extend coverage to indigents and public assistance recipients. In Saskatchewan, Ontario and Prince Edward Island, the provincial government pays premiums on behalf of recipients of provincial public assistance and their dependants; in Manitoba and New Brunswick the specified classes of provincial public assistance recipients are covered automatically without premium payments on their behalf. In most cases, the municipalities are responsible for the payment of premiums on behalf of local relief recipients and other indigent residents not receiving provincial public assistance, or alternatively for payment of per diem rates established by the provincial authority where coverage is not provided. The Federal Government pays premiums on behalf of indigent Indians and of war veterans allowance recipients and their dependants.

In addition to persons voluntarily excluded in Ontario and Prince Edward Island, other persons excluded from the schemes in all provinces include inmates of federal penitentiaries, members of the Armed Forces and the Royal Canadian Mounted Police, transients, visitors and other persons lacking residence qualifications.

Benefits.—Basic in-patient benefits are similar in each of the provinces. They include accommodation and meals at the standard ward level, necessary nursing service, laboratory, radiological and other diagnostic procedures together with the necessary interpretations, specified drugs and biologicals where administered in hospital, use of operating room, case room and anaesthetic facilities including necessary equipment and supplies, routine surgical supplies, use of radiotherapy and physiotherapy facilities, and services rendered by personnel employed by the hospital except for certain services provided by physicians. Benefits do not include the services of doctors or nurses not employed by hospitals, extra charges for private and semi-private accommodation, or drugs excluded by the provincial authority.

Out-patient hospital benefits, allowable on an optional basis under federal legislation as a means of reducing in-patient admissions for diagnostic purposes, have been adopted in widely varying degree by provincial hospital insurance schemes. Only the four Atlantic Provinces provide comprehensive benefits involving laboratory and radiological diagnostic procedures and interpretations (all types in Newfoundland and specified types in Nova Scotia, New Brunswick and Prince Edward Island); use of radiotherapy and physiotherapy facilities (except for exclusion of radiotherapy facilities in New Brunswick); emergency out-patient care including staff services, use of facilities and drugs (except in Newfoundland); and, generally, designated services rendered by persons receiving remuneration from the hospital. Elsewhere, diagnostic services other than those required for emergency out-patient care are excluded, with the exception of tissue pathological examinations, provincial laboratory tests and cancer clinic services in Saskatchewan, and diagnosis for minor surgical procedures in Manitoba and Saskatchewan. Emergency out-patient care following an accident is a benefit in British Columbia, Saskatchewan, Manitoba and Ontario; Manitoba and Saskatchewan also include out-patient services for minor surgical procedures, and Manitoba includes electro-shock therapy. Alberta is the only province without any out-patient benefits generally available, although for the specific group of provincial public assistance recipients it provides the most comprehensive range of out-patient benefits in Canada as part of the provincial hospital insurance scheme.*

Benefits for care provided in out-of-province hospitals also vary between provinces. In most instances they are available only for persons retaining coverage who have moved to another province, or for emergency care of residents temporarily absent from the home province; some provincial schemes permit referrals to out-of-province hospitals for special care that cannot be provided in their own. Most of them place a limit on the length of stay allowed in out-of-province hospitals.

No other specific limit is placed on the duration of hospital care. The criterion applied is the opinion of the attending physician as to whether continued hospital care is a medical necessity. From the outset in most provinces, benefits have applied to both acute and chronic conditions requiring hospitalization. All schemes require regular reports on each patient to substantiate that admission is medically necessary.

Participating Hospitals.—The federal Act provides for inclusion of acute and chronic care hospitals and other 'special facilities' rendering insured services, but specifically excludes mental hospitals, tuberculosis sanatoria and custodial facilities from the federally shared program. For an institution to qualify as a participating hospital, it must be licensed, approved or designated by the provincial hospital insurance authority and listed in an appendix to the federal-provincial agreement. Generally, all public general hospitals have been approved for inclusion in the hospital insurance system, but variations among provinces exist with regard to certain classes of special hospitals, chronic hospitals, private hospitals and nursing homes.

Ontario and Prince Edward Island are the only provinces to include tuberculosis sanatoria and mental hospitals in the provincial hospital insurance scheme; in other provinces separate provisions cover care provided in these classes of hospitals. Costs are paid by the provinces (in some cases there are contributions by municipalities or patients)

* These public assistance benefits are not shareable under federal legislation, since the benefits are not universally available.

with the exception of federal assistance under the Tuberculosis Control Grant and Mental Health Grant. All nine provincial insurance programs, however, cover psychiatric and tuberculosis care provided in general hospitals, and these costs are shared by the Federal Government under the insurance program.

Inclusion of chronic and convalescent hospital care in the insurance program is permitted under federal legislation. Prior to 1958, chronic care hospitals were not covered by the schemes in Newfoundland, Saskatchewan, Alberta and British Columbia, although many chronic patients obtained prepaid care in acute treatment hospitals. On July 1, 1958, Saskatchewan, Manitoba and Newfoundland approved certain chronic facilities for participation in the program. Ontario, Nova Scotia, New Brunswick and Prince Edward Island also included chronic and convalescent facilities when their schemes began in 1959, Alberta added chronic hospitals to its system on Apr. 1, 1959, and British Columbia has indicated plans to extend its program in this area in 1960.

Selected private hospitals providing active treatment care have been approved for payment on a contract basis in some provinces. Ontario has entered the field of nursing home care by approving selected nursing homes for the provision of benefits on an annually renewable basis. Alberta has also made provision for payment of nursing home care in the provincial program.

Federal hospitals for Indians, Eskimos, sick mariners and war veterans have been included by all nine participating provinces, mainly for general care.

Payments to Hospitals.—Although the bulk of payments to hospitals is now made by provincial hospital insurance schemes on behalf of insured beneficiaries, insured patients may be charged for non-insured services at the time of receiving hospital care, and in two provinces must pay deterrent co-insurance charges for insured services. In addition, of course, patients lacking insurance coverage and third parties such as workmen's compensation boards pay all-inclusive rates for insured services provided by the hospital, but not covered by the hospital insurance scheme.

Differential charges for private and semi-private accommodation are controlled by the provincial hospital insurance authorities. In Saskatchewan, Ontario, Nova Scotia and Newfoundland, hospitals are allowed to retain 50 p.c. of the differential and in British Columbia 40 p.c. for their own purposes. In Alberta, Manitoba, New Brunswick and Prince Edward Island, all revenues from such differential charges are deducted from hospital expenses prior to calculation of provincial payments on behalf of insured persons. Charges for non-benefit out-patient services are not controlled by hospital insurance authorities, except in Alberta. Out-patient revenues, however, are deducted from hospital budgets before provincial payments are calculated.

Co-insurance charges, payable by the patient at the time of service and deductible from provincial payments to hospitals, are authorized only in British Columbia and Alberta. In British Columbia, except for public assistance recipients and newborn infants, there is a charge of \$1 per day for in-patient service and \$2 for emergency out-patient care. In Alberta, daily authorized co-insurance charges for in-patient care, payable by the patient, vary between \$1.50 and \$2 per day depending on the size and type of the hospital; for newborn infants the charge is \$1 per day. The Alberta government pays co-insurance charges on behalf of provincial public assistance recipients, juvenile arthritis patients, cancer patients hospitalized for diagnosis up to seven days, poliomyelitis patients and maternity patients and newborn infants up to twelve days.

Provincial payments to hospitals for insured services involve a budget review system in eight of the nine participating provinces. Individual hospitals submit budgets at the beginning of the year, and the insurance authority may disapprove items. Rates of payment based on approved budgets are calculated and paid to the hospitals in a variety of ways in the different provinces. Rates of payment may be adjusted or renegotiated at any time during the course of the year. At the end of the year, rates are reviewed in conjunction with the audited financial statements of hospitals and, if necessary, retroactive adjustments are made.

In Alberta, provincial payments to the hospitals are based on costs actually incurred in the previous year, rather than on approved budgets for the current year. The annual residual operating costs for the prior year are determined by deducting all revenues from co-insurance charges, non-insured services and uninsured patients from the total operating costs of the hospital. Current payments on account are not affected by current occupancy or costs but are subject to a maximum ceiling amount fixed by Ministerial Order. Following a year-end review of the audited cost of the current year's operations, retroactive adjustments may be made to cover approved increases in current residual costs over the previous year.

The Federal Government shares hospital expenses approved as the basis for provincial payments to hospitals for insured services detailed in the federal hospital insurance regulations. These shareable costs include replacement of equipment, but exclude depreciation of buildings and interest charges. Nevertheless, several provinces have accepted varying degrees of responsibility for capital debt in both new and existing facilities as part of their hospital insurance payment provisions. As indicated earlier, all provinces participate in the matching federal-provincial Hospital Construction Grant which assists new construction.

Administration.—The administrative framework of the federal-provincial hospital insurance program is outlined in federal and provincial legislation and regulations, and is detailed in the "scheme for administration" attached to the federal-provincial agreements.

At the federal level, the hospital insurance agreements are administered by the Principal Medical Officer, Health Insurance, under the general direction of the Director of Health Services in the Health Branch of the Department of National Health and Welfare. Financial aspects are handled in co-operation with the Department of Finance and its auditors, and with the Research and Statistics Division of the Department of National Health and Welfare which is responsible for cost estimates and the calculation of final shareable costs. Service and policy aspects are administered in collaboration with the technical and consultant services available in the Health Branch, as well as consultant services from the Research and Statistics Division and the Legal Division.

The pattern of administration at the provincial level varies from province to province. In Saskatchewan and Newfoundland the hospital insurance administration is part of the Department of Health, with the Deputy Ministers of Health as the responsible officers. In Alberta and British Columbia, too, the director of hospital insurance operates within the Department of Health, but reports directly to the Minister. The other five provinces, however, with newer programs, have been influenced strongly by the Blue Cross tradition; in each case a hospital services commission has been set up separately from the health department and reports directly to the Minister of Health.

Section 2.—Health Statistics

The Dominion Bureau of Statistics, as the central statistical agency for Canada, collects, analyses and publishes statistics on health matters, and serves as a source of information for special inquiries on such subjects.

Statistical information on the health of Canadians is at present limited to the well established and highly standardized mortality, communicable disease and institutional statistics series, all of which have been available for a long period. As compared with these records, other national health statistics are still in an early stage of development. So far, the only source of information on general illness, health services and personal expenditure for health care is the Canadian Sickness Survey of 1950-51. Other projects deal with specific health problems or selected groups of the population, such as Civil Service illness and the activities of the Victorian Order of Nurses. Much statistical information is also available from provincial and other health sources.

Statistics on causes of death are given in the Chapter on Vital Statistics, pp. 249-252; those on hospital statistics in Subsection 1 following; and those on notifiable diseases in Subsection 2. A brief outline of the scope and methods of the Sickness Survey of 1950-51 is given in the 1955 Year Book and some of the results are published in the 1955, 1956 and 1957-58 editions. Details are available in bulletin form (Catalogue Nos. 82-501 to 82-511).

Subsection 1.—Hospital Statistics*

The inception, on July 1, 1958 and subsequently, of publicly administered insurance plans for general hospital care (see pp. 283-290) is likely to have profound effects upon Canadian hospital statistics; such effects are not, of course, apparent in the records for 1958 which follow.

In 1958 there were 1,402 hospitals known to be in operation in Canada; their bed capacity (not including bassinets for the newborn) was 183,405. Of the total number of institutions, 101 did not submit movement-of-patient data and somewhat larger numbers failed to report information such as personnel, facilities and finances.

Two methods of hospital classification have been used in the tables of this Subsection: one based on admission policy, i.e., public, private or federal; and the other based on type of service provided, i.e., general, allied special, mental or tuberculosis. Both bases of classification are combined in Tables 1 and 2, which show the number of hospitals of each type and their bed capacities, distributed provincially. In 1958 nearly three of every four institutions recognized by provincial authorities as hospitals were general hospitals, that is, hospitals either devoted primarily to the active treatment of a wide range of illnesses or having an active treatment unit. Such hospitals accounted for at least two of every three hospitals in each province except Quebec, where the ratio was about one in two. As might be expected, the ranking of the provinces in terms of population corresponds closely with their order in number of hospital beds, but not with their rank in number of hospitals. Saskatchewan has many small hospitals and, in 1958, was second to Ontario in number of general hospitals. Bed capacity per 10,000 population was highest in Prince Edward Island, the Prairie Provinces and the Territories (all over 100.0). Except for Newfoundland's 71.1, capacity per 10,000 population ranged between 84.8 and 98.2 in the other provinces.

* Prepared in the Institutions Section of the Health and Welfare Division, Dominion Bureau of Statistics. Detailed information will be found in the following DBS publications: *Hospital Statistics, Vols. I and II* (Catalogue Nos. 83-202 and 83-203); *Mental Health Statistics* (Catalogue No. 83-204) and *Financial Supplement* (No. 83-205); *Tuberculosis Statistics* (No. 83-206) and *Financial Supplement* (No. 83-207).

1.—Hospitals (Public, Private and Federal) Operating in Canada, by Province, 1958

Province and Type of Service	General	Mental ¹	Tuber- culosis ²	Other	Total
	No.	No.	No.	No.	No.
Newfoundland—					
Public.....	46	1	2	3	52
Private.....	1	—	—	—	1
Federal.....	—	—	—	—	—
Prince Edward Island—					
Public.....	8	2	1	1	12
Private.....	—	—	—	—	—
Federal.....	—	—	—	—	—
Nova Scotia—					
Public.....	43	14	4	4	65
Private.....	2	—	—	—	2
Federal.....	6	—	—	1	7
New Brunswick—					
Public.....	33	2	5	4	44
Private.....	—	—	—	—	—
Federal.....	4	—	—	—	4

For footnotes, see end of table, p. 292.

1.—Hospitals (Public, Private and Federal) Operating in Canada, by Province, 1958—concluded

Province and Type of Service	General	Mental ¹	Tuber- culosis ²	Other	Total
	No.	No.	No.	No.	No.
Quebec—					
Public.....	111	13	14	46	184
Private.....	40	3	—	85	128
Federal.....	4	—	—	1	5
Ontario—					
Public.....	180	18	15	28	241
Private.....	18	4	—	34	56
Federal.....	7	—	—	1	8
Manitoba—					
Public.....	72	4	3	2	81
Private.....	6	—	—	1	7
Federal.....	6	—	2	—	8
Saskatchewan—					
Public.....	151	3	3	3	160
Private.....	4	—	—	—	4
Federal.....	2	—	—	1	3
Alberta—					
Public.....	99	7	2	11	119
Private.....	3	—	—	3	6
Federal.....	5	—	—	1	6
British Columbia—					
Public.....	92	7	2	7	108
Private.....	56	1	—	8	65
Federal.....	5	—	3	3	11
Yukon and Northwest Territories—					
Public.....	13	—	—	—	13
Private.....	2	—	—	—	2
Federal.....	—	—	—	—	—
Canada—					
Public.....	848	71	51	109	1,079
Private.....	132	8	—	131	271
Federal.....	39	—	5	8	52

¹ Mental hospitals only; does not include psychiatric or mental units in general hospitals.

² Tuberculosis

hospitals only; does not include tuberculosis units in general hospitals.

2.—Bed Capacity of Hospitals (Public, Private and Federal) Operating in Canada, by Province, as at Dec. 31, 1958

(Excluding bassinets)

Province and Type of Service	General		Mental		Tuberculosis		Other		Totals	
	Beds	Per 10,000 Population ¹	Beds	Per 10,000 Population ¹	Beds	Per 10,000 Population ¹	Beds	Per 10,000 Population ¹	Beds	Per 10,000 Population ¹
Newfoundland—										
Public.....	1,824	41.6	650	14.8	550	12.6	92	2.1	3,116	71.1
Private.....	4	0.1	—	—	—	—	—	—	4	0.1
Federal.....	—	—	—	—	—	—	—	—	—	—
Prince Edward Island—										
Public.....	659	65.9	450	45.0	110	11.0	31	3.1	1,250	125.0
Private.....	—	—	—	—	—	—	—	—	—	—
Federal.....	—	—	—	—	—	—	—	—	—	—
Nova Scotia—										
Public.....	3,172	44.7	2,682	37.8	764	10.8	149	2.1	6,767	95.3
Private.....	16	0.2	—	—	—	—	—	—	16	0.2
Federal.....	790	11.1	—	—	—	—	7	0.1	797	11.2

¹ Based on population as at June 1, 1958.

**2.—Bed Capacity of Hospitals (Public, Private and Federal) Operating in Canada,
by Province, as at Dec. 31, 1958—concluded**

Province and Type of Service	General		Mental		Tuberculosis		Other		Totals	
	Beds	Per 10,000 Population ¹	Beds	Per 10,000 Population ¹	Beds	Per 10,000 Population ¹	Beds	Per 10,000 Population ¹	Beds	Per 10,000 Population ¹
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
New Brunswick—										
Public.....	2,451	42.5	1,331	23.1	909	15.8	204	3.5	4,895	84.8
Private.....	—	—	—	—	—	—	—	—	—	—
Federal.....	517	9.0	—	—	—	—	19	0.3	536	9.3
Quebec—										
Public.....	20,730	42.4	16,482	33.7	3,300	6.8	7,434	15.2	47,946	98.2
Private.....	668	1.4	404	0.8	—	—	1,599	3.3	2,671	5.4
Federal.....	2,571	5.3	—	—	—	—	7	—	2,578	5.3
Ontario—										
Public.....	25,880	44.6	18,769	32.3	4,144	7.1	3,980	6.9	52,773	90.9
Private.....	453	0.8	328	0.6	—	—	673	1.2	1,484	2.6
Federal.....	3,642	6.3	—	—	—	—	130	0.2	3,772	6.5
Manitoba—										
Public.....	4,266	49.0	3,557	40.9	582	6.7	545	6.3	8,950	102.9
Private.....	57	0.7	—	—	—	—	50	0.6	107	1.2
Federal.....	795	9.1	—	—	414	4.8	400	4.6	1,609	18.5
Saskatchewan—										
Public.....	6,076	68.4	3,129	35.2	662	7.5	517	5.8	10,384	116.9
Private.....	14	0.2	—	—	—	—	—	—	14	0.2
Federal.....	167	1.9	—	—	—	—	47	0.5	214	2.4
Alberta—										
Public.....	7,212	60.0	4,697	39.1	597	5.0	864	7.2	13,370	111.3
Private.....	53	0.4	—	—	—	—	78	0.6	131	1.1
Federal.....	1,045	8.7	—	—	—	—	70	0.6	1,115	9.3
British Columbia—										
Public.....	7,500	48.6	5,285	34.2	413	2.7	690	4.5	13,888	89.9
Private.....	1,821	11.8	65	0.4	—	—	170	1.1	2,056	13.3
Federal.....	1,437	9.3	—	—	573	3.7	259	1.7	2,269	14.7
Yukon and Northwest Territories—										
Public.....	668	202.4	—	—	—	—	—	—	668	202.4
Private.....	25	7.6	—	—	—	—	—	—	25	7.6
Federal.....	—	—	—	—	—	—	—	—	—	—
Canada—										
Public.....	80,438	47.2	57,032	33.5	12,031	7.1	14,506	8.5	164,007	96.2
Private.....	3,141	1.8	797	0.5	—	—	2,570	1.5	6,508	3.8
Federal.....	10,964	6.4	—	—	987	0.6	939	0.6	12,890	7.6

¹ Based on population as at June 1, 1958.

Movement of Patients and Patient-Days.—Table 3 shows the changing pattern of hospital utilization over the 1954-58 period. The absolute number of admissions increased by 23.6 p.c. but the ratio per 100,000 population increased by 10.8 p.c. Year-by-year gains, however, proceeded at a declining rate during the five-year period because of downward trends in numbers of admissions to tuberculosis sanatoria, maternity hospitals

and "other" hospitals (special hospitals not specified as to type of service). Concurrently with the 23.6 p.c. rise in admissions, patient-days increased by only 10.9 p.c., indicating a shorter average length of stay per patient in 1958 than in 1954. The number of patients in hospital at year-end per 100,000 population remained remarkably constant over the period—938 on Dec. 31, 1954 and 932 on Dec. 31, 1958. Despite the over-all ratio (in rated-capacity terms) of 16 general hospital beds to every 10 beds in mental institutions, there was a difference of less than 10 p.c. between the number of patients in reporting general hospitals (70,649) and the number in mental institutions (64,188) on Dec. 31, 1958.

3.—Movement of Patients of Reporting Public, Private and Federal Hospitals. by Type, 1954-58

Type of Service and Item	1954	1955	1956	1957	1958
PUBLIC HOSPITALS					
General—					
Hospitals reporting..... No.	762	781	796	820	833
Ratio of reporting to operating hospitals. p.c.	96.0	96.7	97.0	98.4	98.2
Admissions ¹ No.	2,205,335	2,394,777	2,548,389	2,675,400	2,764,214
Per 100,000 population..... "	14,426	15,255	15,847	16,128	16,214
Discharges and deaths..... "	2,204,207	2,392,900	2,547,715	2,673,034	2,760,932
Patients in hospital at Dec. 31..... "	50,185	54,181	55,836	58,359	62,561
Per 100,000 population..... "	328	345	347	352	367
Chronic and Convalescent—					
Hospitals reporting..... No.	34	46	46	51	63
Ratio of reporting to operating hospitals. p.c.	75.6	88.5	86.8	85.0	82.9
Admissions ¹ No.	8,051	10,821	10,323	10,297	10,941
Per 100,000 population..... "	53	69	64	62	64
Discharges and deaths..... "	7,900	10,577	9,748	9,980	10,902
Patients in hospital at Dec. 31..... "	6,500	6,939	7,402	7,898	9,131
Per 100,000 population..... "	43	44	46	48	54
Maternity—					
Hospitals reporting..... No.	13	17	17	12	11
Ratio of reporting to operating hospitals. p.c.	86.7	94.4	94.4	92.3	78.6
Admissions ¹ No.	30,528	28,936	24,715	25,695	24,114
Per 100,000 population..... "	200	184	154	155	141
Discharges and deaths..... "	30,507	29,052	24,681	25,716	24,118
Patients in hospital at Dec. 31..... "	747	647	460	443	432
Per 100,000 population..... "	5	4	3	3	3
Mental—²					
Hospitals reporting..... No.	73	70	71	72	71
Ratio of reporting to operating hospitals. p.c.	100.0	100.0	100.0	100.0	100.0
Admissions ¹ No.	20,734	23,374	23,601	26,133	27,238
Per 100,000 population..... "	136	149	147	158	160
Discharges and deaths..... "	18,778	21,236	22,089	24,821	26,172
Patients in hospital at Dec. 31..... "	59,985	61,264	62,590	63,318	63,861
Per 100,000 population..... "	392	390	389	382	375
Tuberculosis—³					
Hospitals reporting..... No.	56	55	55	54	51
Ratio of reporting to operating hospitals. p.c.	94.9	100.0	100.0	100.0	100.0
Admissions ¹ No.	13,256	13,445	14,075	15,075	13,352
Per 100,000 population..... "	87	86	88	91	78
Discharges and deaths..... "	16,046	16,565	16,855	18,160	15,674
Patients in hospital at Dec. 31..... "	12,122	11,432	10,928	9,657	8,371
Per 100,000 population..... "	79	73	68	58	49
Totals, Public Hospitals—⁴					
Hospitals reporting..... No.	946	983	998	1,020	1,044
Ratio of reporting to operating hospitals. p.c.	94.4	96.3	96.4	97.5	96.8
Admissions ¹ No.	2,286,027	2,485,538	2,632,765	2,762,224	2,851,715
Per 100,000 population..... "	14,954	15,833	16,372	16,651	16,728
Discharges and deaths..... "	2,285,770	2,484,531	2,632,678	2,761,387	2,849,461
Patients in hospital at Dec. 31..... "	130,552	135,813	138,211	140,564	145,864
Per 100,000 population..... "	854	865	859	847	856

For footnotes, see end of table, p. 296.

3.—Movement of Patients of Reporting Public, Private and Federal Hospitals, by Type, 1954-58—continued

Type of Service and Item		1954	1955	1956	1957	1958
PRIVATE HOSPITALS						
General—						
Hospitals reporting.....	No.	62	55	65	63	55
Ratio of reporting to operating hospitals.....	p.c.	--	60.4	81.3	80.8	73.3
Admissions ¹	No.	33,947	37,071	48,137	47,747	53,139
Per 100,000 population.....	"	222	236	299	288	312
Discharges and deaths.....	"	30,553	38,081	47,980	47,665	52,935
Patients in hospital at Dec. 31.....	"	545	529	878	917	895
Per 100,000 population.....	"	4	3	5	6	5
Mental—²						
Hospitals reporting.....	No.	2	4	4	5	5
Ratio of reporting to operating hospitals.....	p.c.	100.0	80.8	80.0	71.4	62.5
Admissions ¹	No.	2,671	1,962	1,955	2,118	2,601
Per 100,000 population.....	"	17	12	12	13	15
Discharges and deaths.....	"	2,657	1,965	1,967	2,065	2,609
Patients in hospital at Dec. 31.....	"	462	392	386	427	327
Per 100,000 population.....	"	3	2	2	3	2
Tuberculosis—³						
Hospitals reporting.....	No.	1	1	1	—	—
Ratio of reporting to operating hospitals.....	p.c.	100.0	100.0	100.0	—	—
Admissions ¹	No.	—	1	1	—	—
Per 100,000 population.....	"	—	--	--	—	—
Discharges and deaths.....	"	—	1	2	—	—
Patients in hospital at Dec. 31.....	"	1	1	—	—	—
Per 100,000 population.....	"	--	--	—	—	—
Totals, Private Hospitals—⁴						
Hospitals reporting.....	No.	172	180	209	237	210
Ratio of reporting to operating hospitals.....	p.c.	64.7	63.2	77.1	78.7	77.5
Admissions ¹	No.	63,161	65,490	74,510	75,210	78,365
Per 100,000 population.....	"	413	417	463	453	460
Discharges and deaths.....	"	62,986	65,379	74,221	74,927	77,959
Patients in hospital at Dec. 31.....	"	3,102	3,076	3,769	4,361	4,493
Per 100,000 population.....	"	20	20	23	26	26
FEDERAL HOSPITALS						
General—						
Hospitals reporting.....	No.	39	36	35	35	33
Ratio of reporting to operating hospitals.....	p.c.	100.0	100.0	100.0	100.0	100.0
Admissions ¹	No.	73,598	75,506	73,342	74,327	74,766
Per 100,000 population.....	"	481	481	456	448	439
Discharges and deaths.....	"	73,501	75,775	73,564	74,486	74,962
Patients in hospital at Dec. 31.....	"	7,837	7,579	7,563	7,405	7,193
Per 100,000 population.....	"	51	48	47	45	42
Tuberculosis—³						
Hospitals reporting.....	No.	7	7	6	6	5
Ratio of reporting to operating hospitals.....	p.c.	100.0	100.0	100.0	100.0	100.0
Admissions ¹	No.	977	789	780	750	694
Per 100,000 population.....	"	6	5	5	5	4
Discharges and deaths.....	"	1,168	1,100	970	1,006	950
Patients in hospital at Dec. 31.....	"	1,064	894	834	776	696
Per 100,000 population.....	"	7	6	5	5	4
Totals, Federal Hospitals—⁴						
Hospitals reporting.....	No.	53	55	52	48	47
Ratio of reporting to operating hospitals.....	p.c.	100.0	100.0	100.0	100.0	100.0
Admissions ¹	No.	83,512	84,618	82,562	77,665	76,205
Per 100,000 population.....	"	546	539	513	468	447
Discharges and deaths.....	"	83,475	85,208	82,829	77,927	76,488
Patients in hospital at Dec. 31.....	"	9,791	9,161	9,132	8,713	8,477
Per 100,000 population.....	"	64	58	57	53	50

For footnotes, see end of table, p. 296.

3.—Movement of Patients of Reporting Public, Private and Federal Hospitals, by Type, 1954-58—concluded

Type of Service and Item	1954	1955	1956	1957	1958
ALL HOSPITALS ⁴					
General—					
Hospitals reporting..... No.	883	872	896	918	921
Ratio of reporting to operating hospitals. p.c.	--	93.3	95.7	97.0	96.3
Admissions ¹ No.	2,312,880	2,507,354	2,669,868	2,797,474	2,892,119
Per 100,000 population..... "	15,130	15,972	16,603	16,863	16,965
Discharges and deaths..... "	2,308,261	2,506,756	2,669,259	2,795,185	2,888,829
Patients in hospital at Dec. 31..... "	58,567	62,289	64,277	66,681	70,649
Per 100,000 population..... "	383	397	400	402	414
Chronic and Convalescent—					
Hospitals reporting..... No.	34	46	46	51	63
Ratio of reporting to operating hospitals. p.c.	75.6	88.5	86.8	85.0	82.9
Admissions ¹ No.	8,051	10,821	10,323	10,297	10,941
Per 100,000 population..... "	53	69	64	62	64
Discharges and deaths..... "	7,900	10,577	9,748	9,980	10,902
Patients in hospital at Dec. 31..... "	6,500	6,939	7,402	7,898	9,131
Per 100,000 population..... "	43	44	46	48	54
Maternity—					
Hospitals reporting..... No.	13	17	17	12	11
Ratio of reporting to operating hospitals. p.c.	86.7	94.4	94.4	92.3	78.6
Admissions ¹ No.	30,528	28,936	24,715	25,695	24,114
Per 100,000 population..... "	200	184	154	155	141
Discharges and deaths..... "	30,507	29,052	24,681	25,716	24,118
Patients in hospital at Dec. 31..... "	747	647	460	443	432
Per 100,000 population..... "	5	4	3	3	3
Mental—²					
Hospitals reporting..... No.	75	74	75	77	76
Ratio of reporting to operating hospitals. p.c.	100.0	98.7	98.7	97.5	96.2
Admissions ¹ No.	23,405	25,336	25,556	28,251	29,839
Per 100,000 population..... "	153	161	159	170	175
Discharges and deaths..... "	21,435	23,201	24,056	26,886	28,781
Patients in hospital at Dec. 31..... "	60,447	61,656	62,976	63,745	64,188
Per 100,000 population..... "	395	393	392	384	377
Tuberculosis—³					
Hospitals reporting..... No.	64	63	62	60	56
Ratio of reporting to operating hospitals. p.c.	95.5	100.0	100.0	100.0	100.0
Admissions ¹ No.	14,233	14,235	14,856	15,825	14,046
Per 100,000 population..... "	93	91	92	95	82
Discharges and deaths..... "	17,214	17,666	17,827	19,166	16,624
Patients in hospital at Dec. 31..... "	13,187	12,327	11,762	10,433	9,067
Per 100,000 population..... "	86	79	73	63	53
Totals, All Hospitals—⁴					
Hospitals reporting..... No.	1,171	1,218	1,259	1,305	1,301
Ratio of reporting to operating hospitals. p.c.	88.6	89.5	92.6	93.5	93.1
Admissions ¹ No.	2,432,700	2,635,646	2,789,837	2,915,099	3,006,285
Per 100,000 population..... "	15,913	16,790	17,349	17,572	17,634
Discharges and deaths..... "	2,432,231	2,635,118	2,789,728	2,914,241	3,003,908
Patients in hospital at Dec. 31..... "	143,445	148,050	151,112	153,638	158,834
Per 100,000 population..... "	938	943	940	926	932

¹ First admissions and readmissions.

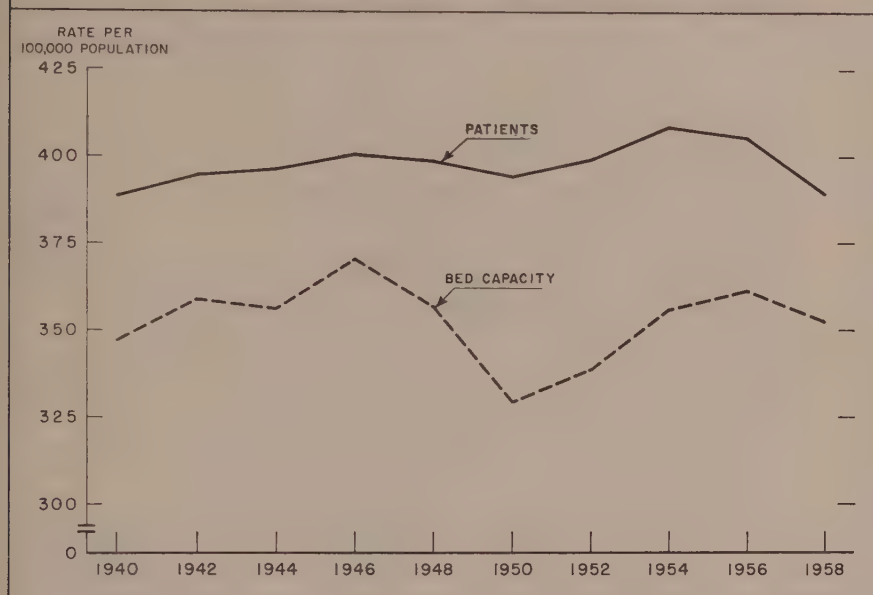
² Mental hospitals only; does not include psychiatric or mental units of general hospitals.

³ Tuberculosis hospitals only; does not include tuberculosis units of general hospitals.

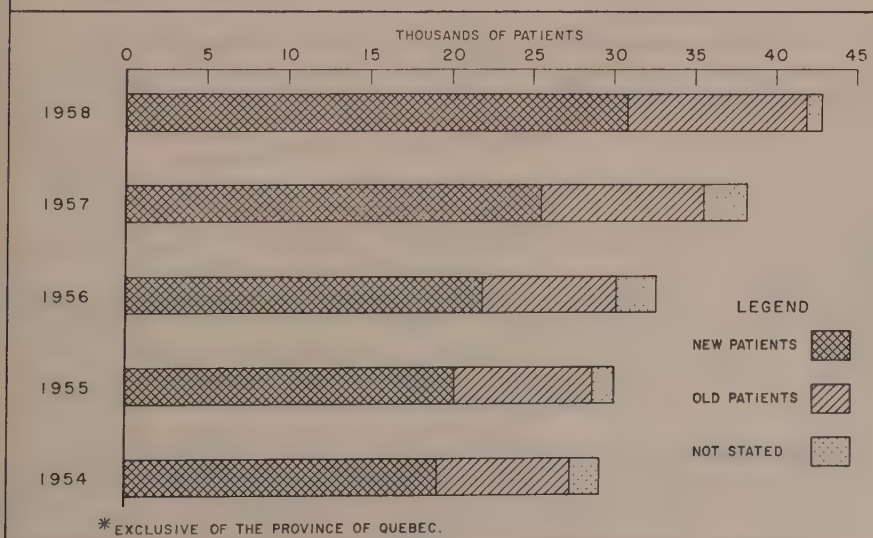
⁴ Includes other types not specified.

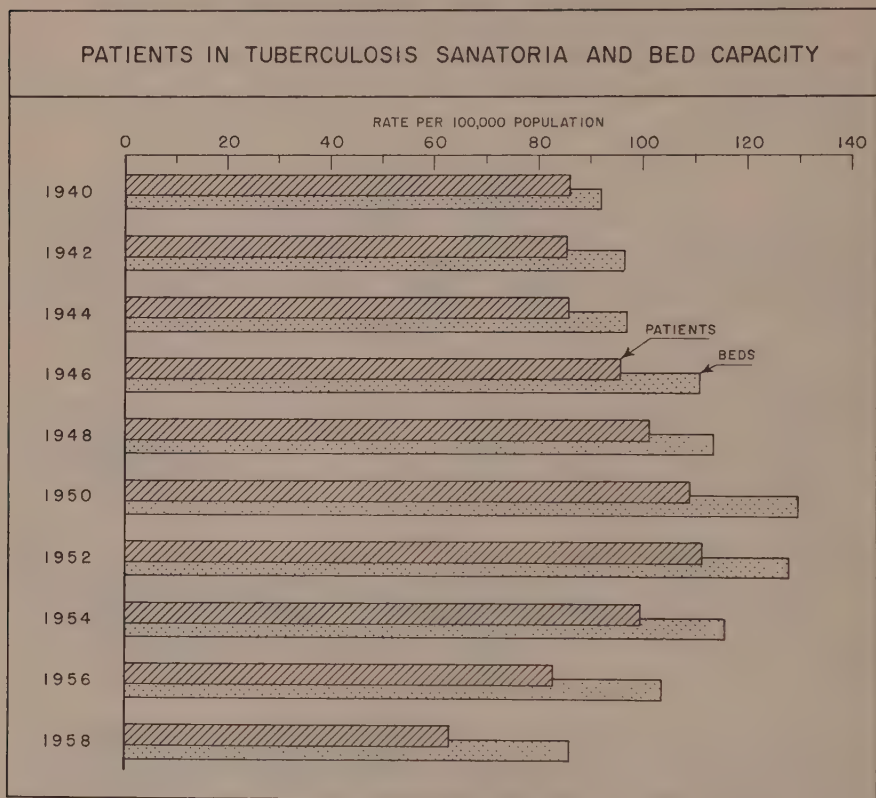
PATIENTS IN MENTAL INSTITUTIONS AND BED CAPACITY

AS AT DEC. 31, 1940 - 58



PATIENTS OF MENTAL CLINICS AND OUT-PATIENT DEPARTMENTS*





4.—Patient-Days of Reporting Public, Private and Federal Hospitals, by Type, 1954-58

Type of Service and Item		1954	1955	1956	1957	1958
PUBLIC HOSPITALS						
General—						
Hospitals reporting.....	No.	762	781	796	820	833
Patient-days.....		21,198,597	22,728,944	24,113,477	24,910,797	25,752,916
Mental—						
Hospitals reporting.....	No.	73	70	71	72	71
Patient-days.....		22,205,028	22,824,487	23,269,402	23,393,648	23,942,562
Tuberculosis— ²						
Hospitals reporting.....	No.	58	55	55	54	51
Patient-days.....		4,613,709	4,398,047	4,240,546	3,887,198	3,413,428
Other—						
Hospitals reporting.....	No.	55	77	76	74	89
Patient-days.....		3,079,836	3,318,501	3,215,216	3,429,547	4,071,029
Totals, Public Hospitals—						
Hospitals reporting.....	No.	948	983	998	1,020	1,044
Patient-days.....		51,097,170	53,269,979	54,838,641	55,621,190	57,179,935

For footnotes, see end of table.

4.—Patient-Days of Reporting Public, Private and Federal Hospitals, by Type, 1954-58 —concluded

Type of Service and Item		1954	1955	1956	1957	1958
PRIVATE HOSPITALS						
General—						
Hospitals reporting.....	No.	62	55	65	63	55
Patient-days.....	"	232,658	233,709	366,395	378,235	342,934
Mental— ¹						
Hospitals reporting.....	No.	2	4	4	5	5
Patient-days.....	"	105,120	145,599	146,078	150,013	121,930
Tuberculosis— ²						
Hospitals reporting.....	No.	1	1	1	—	—
Patient-days.....	"	365	365	34	—	—
Other—						
Hospitals reporting.....	No.	107	120	139	169	150
Patient-days.....	"	763,439	781,189	935,408	1,107,701	1,176,016
Totals, Private Hospitals—						
Hospitals reporting.....	No.	172	180	209	237	210
Patient-days.....	"	1,101,582	1,160,862	1,447,915	1,635,949	1,640,880
FEDERAL HOSPITALS						
General—						
Hospitals reporting.....	No.	39	36	35	35	33
Patient-days.....	"	3,233,720	3,196,335	3,137,461	3,098,808	2,986,536
Tuberculosis— ²						
Hospitals reporting.....	No.	7	7	6	6	5
Patient-days.....	"	399,077	350,083	339,316	319,636	297,798
Other—						
Hospitals reporting.....	No.	7	12	11	8	9
Patient-days.....	"	346,644	320,311	279,349	178,710	219,052
Totals, Federal Hospitals—						
Hospitals reporting.....	No.	53	55	52	49	47
Patient-days.....	"	3,979,441	3,866,729	3,756,126	3,597,154	3,503,386
ALL HOSPITALS						
General—						
Hospitals reporting.....	No.	863	872	896	918	921
Patient-days.....	"	24,664,975	26,158,988	27,617,333	28,387,840	29,082,386
Mental— ¹						
Hospitals reporting.....	No.	75	74	75	77	76
Patient-days.....	"	22,310,148	22,970,086	23,415,480	23,543,661	24,064,492
Tuberculosis— ²						
Hospitals reporting.....	No.	66	63	62	60	56
Patient-days.....	"	5,013,151	4,748,495	4,579,896	4,206,834	3,711,226
Other—						
Hospitals reporting.....	No.	169	209	226	251	248
Patient-days.....	"	4,189,919	4,420,001	4,429,973	4,715,958	5,466,097
Totals, All Hospitals—						
Hospitals reporting.....	No.	1,173	1,218	1,259	1,306	1,301
Patient-days.....	"	56,178,193	58,297,570	60,042,632	60,854,293	62,324,201

¹ Mental hospitals only; does not include psychiatric or mental units of general hospitals.

² Tuberculosis hospitals only; does not include tuberculosis units of general hospitals.

Diagnoses of Patients in Mental Institutions and Tuberculosis Sanatoria.—Tables 5 and 6 summarize the most recent data available on diagnoses according to age and sex of patients on the books of mental institutions and tuberculosis sanatoria, including patients in related units located in general hospitals.

Of the 70,311 mentally ill patients on record at Dec. 31, 1957, 65.7 p.c. had been diagnosed as psychotics, 30.8 p.c. as mental defectives, alcoholics and persons otherwise affected by disorders of character, behaviour and intelligence, and 2.3 p.c. as psychoneurotics. More men than women had been institutionalized for disorders of character, behaviour and intelligence; the largest frequencies of both sexes occurred in the 10-19 age group and diminished in each age group thereafter. Similarly, more men than women (except those 70 years of age or over) had been diagnosed as psychotic. However, in all age groups, nearly twice as many women as men had required hospitalization for conditions diagnosed as psychoneurotic. The incidence among hospitalized psychoneurotics, both male and female, was highest at ages 40-49.

5.—Diagnoses of Patients on the Books of Reporting Mental Hospitals, by Class, and by Age and Sex, 1957

NOTE.—Special census data available for 1957 only. Figures include patients in 79 mental hospitals and also patients in psychiatric and in mental units of general hospitals.

Diagnosis	0-9		10-19		20-29		30-39	
	M.	F.	M.	F.	M.	F.	M.	F.
	No.	No.	No.	No.	No.	No.	No.	No.
Psychoses.....	9	4	291	209	2,107	1,342	4,058	3,278
Schizophrenia.....	4	5	229	140	1,715	985	3,148	2,398
Manic-depressive reaction.....	—	—	13	12	98	132	249	373
Of old age.....	—	—	—	—	—	—	—	—
Other.....	5	1	49	57	294	225	663	513
Psychoneuroses.....	—	—	16	24	64	136	97	213
Neurotic-depressive reaction.....	—	—	7	9	20	58	30	108
Anxiety reaction.....	—	—	2	2	23	18	23	51
Other.....	—	—	7	13	21	60	44	74
Disorders of character, behaviour and intelligence.....	1,143	881	3,330	2,372	2,443	1,880	1,870	1,581
Alcoholism.....	—	—	2	—	18	2	80	23
Mental deficiency.....	1,081	880	3,092	2,154	2,106	1,626	1,504	1,280
Other.....	82	61	236	213	319	252	286	278
Non-psychiatric and unreported diagnoses..	25	19	38	37	59	27	70	45
	40-49		50-59		60+		Total ¹	
	M.	F.	M.	F.	M.	F.	M.	F.
	No.	No.	No.	No.	No.	No.	No.	No.
Psychoses.....	4,948	4,294	5,122	4,391	7,937	8,140	24,523	21,698
Schizophrenia.....	3,372	2,745	2,385	2,316	2,994	2,818	14,356	11,423
Manic-depressive reaction.....	416	539	504	608	771	1,063	2,052	2,732
Of old age.....	15	7	62	52	2,021	2,445	2,103	2,509
Other.....	1,145	1,003	1,691	1,415	2,151	1,814	6,012	5,034
Psychoneuroses.....	120	218	116	211	123	253	538	1,058
Neurotic-depressive reaction.....	40	82	45	76	66	112	208	448
Anxiety reaction.....	21	30	17	19	9	26	96	122
Other.....	69	106	54	116	48	115	234	434
Disorders of character, behaviour and intelligence.....	1,424	1,288	982	844	850	710	12,059	9,568
Alcoholism.....	103	23	91	20	77	17	373	35
Mental deficiency.....	1,100	1,068	753	699	641	593	10,251	8,252
Other.....	221	207	158	125	132	100	1,435	1,231
Non-psychiatric and unreported diagnoses..	83	40	97	56	130	138	504	363

¹ Includes age groups not known.

Among patients reported as on the books of tuberculosis institutions at the end of 1958, the peak frequency for men (1,001) occurred in the 50-59 age group, and for women (789) in the 20-29 age group. More men than women were listed in each age group except those encompassing ages 10-29. Compared with 1,001 men, only 338 women between the ages of 50 and 59 were carried on the books of tuberculosis sanatoria and units at Dec. 31, 1958; in contrast, the peak frequency for women aged 20-29 (789) was closely approximated in number by male patients (784).

6.—Diagnoses of Patients on the Books of Reporting Tuberculosis Hospitals, by Class, and by Age and Sex, 1958

NOTE.—Figures include patients in 82 tuberculosis hospitals and also patients in tuberculosis units of general hospitals.

Diagnosis	0-9		10-19		20-29		30-39	
	M.	F.	M.	F.	M.	F.	M.	F.
	No.	No.	No.	No.	No.	No.	No.	No.
Respiratory tuberculosis.....	447	429	387	506	737	730	782	680
With occupational disease of lung.....	—	—	—	—	1	1	—	—
Minimal pulmonary.....	65	55	112	163	149	189	145	169
Moderately advanced pulmonary.....	35	28	106	147	348	314	325	273
Far advanced pulmonary.....	12	8	58	76	195	189	281	210
Other and unspecified pulmonary.....	22	27	5	14	5	2	7	8
Pleurisy with or without effusion.....	12	12	42	39	36	26	24	17
Primary infection.....	237	285	61	62	3	5	—	1
Other.....	16	14	3	5	—	4	—	2
Tuberculosis, other forms.....	58	57	59	53	47	59	58	47
	40-49		50-59		60+		Total ¹	
	M.	F.	M.	F.	M.	F.	M.	F.
	No.	No.	No.	No.	No.	No.	No.	No.
Respiratory tuberculosis.....	834	459	972	317	1,372	470	5,655	3,660
With occupational disease of lung.....	—	1	3	—	9	—	14	3
Minimal pulmonary.....	104	97	116	52	131	70	844	815
Moderately advanced pulmonary.....	335	192	379	127	598	196	2,172	1,299
Far advanced pulmonary.....	369	159	460	128	610	191	2,028	976
Other and unspecified pulmonary.....	5	2	4	1	7	2	55	53
Pleurisy with or without effusion.....	21	7	9	6	15	9	161	116
Primary infection.....	—	—	—	—	—	—	358	361
Other.....	—	1	1	3	2	2	23	32
Tuberculosis, other forms.....	40	31	29	21	32	20	331	294

¹ Includes age groups not known.

Facilities.—Table 7 shows the prevalence of special facilities in public and federal hospitals distributed by province. Nationally, over 75 p.c. of these hospitals were equipped with radiology, clinical laboratory and out-patient facilities, but fewer than 50 p.c. with physiotherapy facilities. Among other factors, the type of service offered in a hospital determines to some extent the facilities provided. For example, about 84 p.c. of the general hospitals reported radiology, clinical laboratory and out-patient facilities, and nearly half of these hospitals provided physiotherapy facilities. On the other hand, only just over one of every three mental institutions had clinical laboratory, physiotherapy and out-patient facilities, although about two of every three had radiology facilities. Among tuberculosis institutions, slightly more than three of every four were equipped with radiology facilities, about 85 p.c. with clinical laboratory, and only about one of every three with physiotherapy and out-patient facilities. Fewer than one-third of "other" hospitals provided radiology, clinical laboratory and out-patient facilities, while slightly more than one-third were equipped for physiotherapy.

7.—Facilities of Reporting Public and Federal Hospitals, by Province, 1958

NOTE.—Adequate information on the facilities of private hospitals is not available.

Province and Type of Service	Hospitals Reporting	Facilities—			
		Radiology	Clinical Laboratory	Physiotherapy	Out-Patient
Newfoundland—	No.	No.	No.	No.	No.
General.....	38	27	26	6	38
Mental.....	1	1	1	1	1
Tuberculosis.....	2	2	2	1	—
Other.....	1	—	—	—	—
Prince Edward Island—					
General.....	8	8	7	3	7
Mental.....	2	1	1	—	—
Tuberculosis.....	1	1	1	1	—
Other.....	—	—	—	—	—
Nova Scotia—					
General.....	49	46	39	18	42
Mental.....	14	2	1	1	—
Tuberculosis.....	4	3	4	2	—
Other.....	3	2	—	1	2
New Brunswick—					
General.....	35	33	21	15	33
Mental.....	2	2	1	2	1
Tuberculosis.....	5	5	3	2	—
Other.....	6	2	1	2	3
Quebec—					
General.....	110	108	105	78	101
Mental.....	13	11	2	5	2
Tuberculosis.....	14	12	13	5	—
Other.....	38	10	15	9	5
Ontario—					
General.....	186	183	158	86	176
Mental.....	18	15	7	4	9
Tuberculosis.....	15	12	12	3	—
Other.....	29	7	11	15	9
Manitoba—					
General.....	76	68	45	31	73
Mental.....	4	4	3	2	4
Tuberculosis.....	5	5	5	2	—
Other.....	2	1	1	1	1
Saskatchewan—					
General.....	153	153	140	79	153
Mental.....	3	3	3	2	2
Tuberculosis.....	3	—	3	—	—
Other.....	4	—	—	—	—
Alberta—					
General.....	103	103	98	59	83
Mental.....	7	3	3	3	3
Tuberculosis.....	2	1	2	1	—
Other.....	6	1	2	3	2
British Columbia—					
General.....	95	86	79	49	89
Mental.....	7	3	2	3	—
Tuberculosis.....	3	2	4	1	—
Other.....	9	1	1	6	2
Yukon and Northwest Territories—					
General.....	13	13	11	5	10
Mental.....	—	—	—	—	—
Tuberculosis.....	—	—	—	—	—
Other.....	—	—	—	—	—
Canada —					
General.....	866	828	729	429	805
Mental.....	71	45	24	23	22
Tuberculosis.....	56	43	49	18	—
Other.....	98	24	31	37	24

¹ Two sanatoria reported as one hospital.

Personnel.—Table 8 shows the provincial distribution at the end of 1958 of hospital-paid personnel in health institutions classified according to type of service. General hospitals, with active treatment as their prime concern, had a relatively high ratio of 1,600.0 full-time and part-time employees per 1,000 beds, and well over three times more nursing personnel per 1,000 beds than hospitals of any other type. The highest ratio of medical staff per 1,000 beds was observable in tuberculosis institutions. Provincially, total staff and nursing personnel ratios were highest in Ontario for general hospitals (1,819.6 and 762.5 respectively); in Newfoundland for mental institutions (875.4 and 418.5); and in Nova Scotia for "other" hospitals (1,378.8 and 734.8). Among tuberculosis sanatoria, those in Nova Scotia employed the largest total staffs, and those in British Columbia the largest nursing staffs per 1,000 beds of rated capacity.

8.—Hospital-Paid Personnel of Reporting Public, Private and Federal Hospitals, by Type and by Province, 1958

NOTE.—Includes full-time and part-time personnel.

Province and Type of Service	Hos- pitals Re- porting	Medical Staff		Nursing Staff		Other Personnel		Totals, Personnel	
		No.	Per 1,000 Beds	No.	Per 1,000 Beds	No.	Per 1,000 Beds	No.	Per 1,000 Beds
Newfoundland—	No.								
General.....	38	84	48.4	1,119	645.3	1,201	692.6	2,404	1,386.4
Mental ¹	1	36	55.4	272	418.5	261	401.5	569	875.4
Tuberculosis ²	2	17	30.9	143	260.0	306	556.4	466	847.3
Other.....	1	—	—	4	500.0	6	750.0	10	1,250.0
Prince Edward Island—									
General.....	8	5	7.6	333	505.3	342	519.0	680	1,031.9
Mental ¹	2	18	40.0	70	155.6	159	353.3	247	548.9
Tuberculosis ²	1	2	18.2	24	218.2	62	563.6	88	800.0
Other.....	—	—	—	—	—	—	—	—	—
Nova Scotia—									
General.....	49	84	21.2	2,518	636.3	3,194	807.2	5,796	1,464.7
Mental ¹	14	37	13.8	364	135.7	711	265.1	1,112	414.6
Tuberculosis ²	4	22	28.8	205	268.3	491	642.7	718	939.8
Other.....	3	4	30.3	97	734.8	81	613.6	182	1,378.8
New Brunswick—									
General.....	35	32	10.8	2,101	707.9	2,477	834.6	4,610	1,553.2
Mental ¹	2	38	28.5	207	155.5	459	344.9	704	528.9
Tuberculosis ²	5	19	20.9	154	169.4	468	514.9	641	705.2
Other.....	6	5	22.4	74	331.8	60	269.1	139	623.3
Quebec—									
General.....	134	534	22.7	13,588	576.7	21,093	895.2	35,215	1,494.5
Mental ¹	13	254	15.4	2,382	144.5	2,187	132.7	4,823	292.6
Tuberculosis ²	14	196	59.4	316	95.8	1,525	462.1	2,037	617.3
Other.....	95	114	14.6	1,130	145.1	2,726	349.9	3,970	509.6
Ontario—									
General.....	199	592	19.8	22,791	762.5	31,008	1,037.4	54,391	1,819.6
Mental ¹	22	301	15.8	3,978	208.3	5,403	282.9	9,682	507.0
Tuberculosis ²	15	88	21.2	722	174.2	1,612	389.0	2,422	584.5
Other.....	55	52	11.2	1,122	241.9	3,257	702.2	4,431	955.4
Manitoba—									
General.....	82	100	19.5	3,598	702.2	4,692	915.7	8,390	1,637.4
Mental ¹	4	35	9.8	628	176.6	582	163.6	1,245	350.0
Tuberculosis ²	5	18	18.1	205	205.8	447	448.8	670	672.7
Other.....	2	16	26.9	187	314.3	519	872.3	722	1,213.4

**8.—Hospital-Paid Personnel of Reporting Public, Private and Federal Hospitals,
by Type and by Province, 1958—concluded**

Province and Type of Service	Hos- pitals Re- porting	Medical Staff		Nursing Staff		Other Personnel		Totals, Personnel	
		No.	Per 1,000 Beds	No.	Per 1,000 Beds	No.	Per 1,000 Beds	No.	Per 1,000 Beds
Saskatchewan—	No.								
General.....	153	48	7.7	3,824	613.8	6,024	966.9	9,896	1,588.4
Mental ¹	3	41	13.1	1,050	335.6	729	233.0	1,820	581.7
Tuberculosis ²	3	15	22.7	181	273.4	204	444.1	490	740.2
Other.....	8	2	3.4	132	223.4	231	390.9	365	617.6
Alberta—									
General.....	105	83	10.0	5,051	608.7	6,838	824.1	11,972	1,442.8
Mental ¹	7	34	7.2	846	180.1	992	211.2	1,872	398.6
Tuberculosis ²	2	17	28.5	146	244.6	298	499.2	461	772.2
Other.....	8	5	10.4	133	275.4	236	488.6	374	774.3
British Columbia—									
General.....	102	103	11.3	5,623	617.4	8,130	892.7	13,856	1,521.5
Mental ¹	8	52	9.7	2,037	380.7	643	120.2	2,732	510.7
Tuberculosis ²	5	38	38.5	329	333.7	530	537.5	897	909.7
Other.....	65	11	4.0	783	282.7	1,107	399.6	1,901	686.3
Yukon and Northwest Territories—									
General.....	15	2	2.9	103	149.5	236	342.5	341	494.9
Mental ¹	—	—	—	—	—	—	—	—	—
Tuberculosis ²	—	—	—	—	—	—	—	—	—
Other.....	—	—	—	—	—	—	—	—	—
Canada—									
General.....	920	1,667	18.1	60,649	657.7	85,235	924.3	147,551	1,600.0
Mental ¹	76	846	14.7	11,834	206.1	12,126	211.2	24,806	432.0
Tuberculosis ²	56	432	33.2	2,425	186.3	6,033	463.4	8,890	682.9
Other.....	243	209	12.1	3,662	212.5	8,223	477.2	12,094	701.9

¹ Mental hospitals only; does not include psychiatric or mental units in general hospitals.

² Tuberculosis

hospitals only; does not include tuberculosis units in general hospitals.

Finances.—Table 9 gives summary financial statistics for 1958 with respect to reporting public hospitals. Such institutions incurred total net expenditures of \$570,900,000, the equivalent of \$10.35 per patient-day, which was 99 cents more for each day of patient care than in 1957. At the same time, total income amounted to \$545,400,000—\$25,500,000 less than operating costs. Both income and expenditure advanced from their respective 1957 levels of \$490,100,000 and \$510,700,000 at approximately similar rates; as a result, “operating deficit” was \$4,833,000 more at the end of 1958 than one year earlier. For “other” hospitals, costs incurred for salaries and wages amounted to 91.0 p.c. of net patient earnings; for general hospitals, to 74.5 p.c. However, since provincial government funds accounted for most of the revenue of mental institutions and tuberculosis sanatoria, such costs for the former amounted to more than seven times the value of net patient earnings, and for the latter to over 73 times the amount earned from patients. For general hospitals, total costs per patient-day were highest in British Columbia (\$17.56); for tuberculosis sanatoria and “other” hospitals, in Alberta (\$14.84 and \$16.34, respectively); and for mental institutions, in Newfoundland (\$6.71).

9.—Revenues and Expenditures of Reporting Public Hospitals, by Type of Hospital and by Province, 1958

Note.—Financial data for private and federal hospitals not available.

Province	Revenues				Expenditures			Cost per Patient-Day
	Net Patient Earnings	Government and Municipal Grants and Payments	Other	Total Revenue	Salaries and Wages	Other	Total Net Expenditure	
GENERAL HOSPITALS								
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$
Newfoundland.....	4,198	1,676	212	6,086	3,440	2,674	6,114	14.15
Prince Edward Island.....	1,413	174	60	1,647	942	810	1,752	10.58
Nova Scotia.....	10,540	637	319	11,496	7,959	5,739	13,698	14.67
New Brunswick.....	9,291	1,598	187	11,076	6,655	5,370	12,025	15.79
Quebec.....	84,447	1,208	5,538	91,193	56,539	40,418	96,957	16.63
Ontario.....	125,820	12,943	4,983	143,746	101,004	50,893	151,897	17.36
Manitoba.....	20,189	402	423	21,014	12,778	8,102	20,880	15.60
Saskatchewan.....	29,375	543	643	30,561	21,172	10,844	32,016	15.81
Alberta.....	29,550	3,867	716	34,133	22,807	13,476	36,283	15.73
British Columbia.....	39,962	602	1,341	41,905	31,173	13,231	44,404	17.56
Canada ¹	354,785	23,650	14,422	392,857	264,469	151,557	416,026	16.59
MENTAL INSTITUTIONS ²								
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$
Newfoundland.....	66	2,175	—	2,241	1,181	1,060	2,241	6.71
Prince Edward Island.....	133	484	—	617	264	353	617	3.49
Nova Scotia.....	530	2,932	130	3,592	1,913	1,694	3,607	3.58
New Brunswick.....	298	2,621	2	2,922	1,715	1,207	2,922	4.31
Quebec.....	2,041	13,708	772	16,522	8,341	8,598	16,940	2.61
Ontario.....	2,740	34,403	—	37,143	25,835	11,308	37,143	4.71
Manitoba.....	525	4,100	57	4,681	3,000	1,637	4,637	3.34
Saskatchewan.....	139	8,407	46	8,592	5,635	2,447	8,081	5.00
Alberta.....	708	7,451	75	8,235	5,777	2,458	8,235	4.83
British Columbia.....	1,088	10,817	—	11,905	6,517	5,389	11,905	5.21
Canada ¹	8,268	87,098	1,083	96,449	60,178	36,149	96,327	4.08
TUBERCULOSIS SANATORIA ³								
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$
Newfoundland.....	—	1,565	35	1,600	864	736	1,600	9.71
Prince Edward Island.....	4	228	29	261	145	116	261	8.70
Nova Scotia.....	—	1,952	301	2,253	1,291	962	2,253	11.54
New Brunswick.....	21	2,319	118	2,458	1,385	1,105	2,490	11.47
Quebec.....	71	5,186	1,188	6,445	3,185	3,413	6,598	6.84
Ontario.....	55	6,154	3,260	9,469	5,607	3,636	9,243	8.82
Manitoba.....	1	1,113	298	1,412	824	594	1,418	7.91
Saskatchewan.....	—	1,289	599	1,888	1,322	565	1,887	10.32
Alberta.....	3	2,106	255	2,364	1,628	736	2,364	14.84
British Columbia.....	89	1,970	237	2,296	1,653	643	2,296	14.60
Canada ¹	244	23,882	6,320	30,446	17,904	12,506	30,410	9.22

For footnotes, see end of table, p. 306.

9.—Revenues and Expenditures of Reporting Public Hospitals, by Type of Hospital and by Province, 1958—concluded

Province	Revenues				Expenditures			Cost per Patient-Day
	Net Patient Earnings	Government and Municipal Grants and Payments	Other	Total Revenue	Salaries and Wages	Other	Total Net Expenditure	
	OTHER HOSPITALS							
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$
Newfoundland.....	1	35	9	45	13	27	40	16.02
Prince Edward Island.....	—	—	—	—	—	—	—	—
Nova Scotia.....	355	63	34	452	268	215	483	11.03
New Brunswick.....	147	18	29	194	95	109	204	6.77
Quebec.....	8,881	518	1,440	10,839	6,224	5,279	11,503	7.69
Ontario.....	6,440	1,632	1,546	9,618	7,438	3,911	11,349	9.19
Manitoba.....	1,812	147	38	1,997	1,538	459	1,997	13.99
Saskatchewan.....	—	—	—	—	—	—	—	—
Alberta.....	384	80	162	626	436	165	601	16.34
British Columbia.....	1,006	752	120	1,878	1,307	650	1,957	8.78
Canada ¹	19,026	3,245	3,378	25,649	17,319	10,815	28,134	8.77

¹ Exclusive of the Territories for which adequate information is not available. ² Mental hospitals only; does not include psychiatric or mental units in general hospitals. ³ Tuberculosis hospitals only; does not include tuberculosis units in general hospitals.

Subsection 2.—Notifiable Disease and Other Health Statistics*

Health statistics collected nationally—in addition to statistics of hospitals dealt with at pp. 291-306—cover notifiable diseases, illness among federal civil servants, and home nursing services. The first two series are dealt with briefly below; the third series is based on the experience of the Victorian Order of Nurses for Canada which is the major home nursing organization in the country. Results of the latter annual survey are available in duletin form (Catalogue No. 82-202).

Notifiable Diseases.—Notifiable diseases are essentially communicable diseases, reportable according to provincial health regulations. The progress that has been made toward the successful treatment and eradication of such diseases is indicated by the fact that the proportion of total deaths attributable to notifiable diseases dropped from 9.4 p.c. in 1931 to 1.0 p.c. in 1958, and the death rate from 94.9 per 100,000 population to 8.3. The incidence of such diseases in 1958 in the various provinces is shown in Table 10, with comparable totals for 1957.

Significant decreases in 1958 over 1957 were noted for diphtheria (53.5 p.c.), epidemic influenza (97.2 p.c.), mumps (40.3 p.c.), and rubella (German measles) (54.8 p.c.). The influenza total for 1958 portrays a more normal incidence of this disease than the 1957 total, since the latter was inflated by the Asian influenza epidemic that occurred in the autumn of that year.

In October 1958, the Dominion Council of Health, working in co-operation with provincial authorities, recommended the elimination of needless reporting of certain diseases that no longer constitute a serious health problem in Canada, including chickenpox, measles, mumps and German measles. As a result, national statistics will no longer carry information on these diseases. Other changes involved the modernizing of certain terminology, for example, the replacing of "non-paralytic poliomyelitis" with "viral or aseptic meningitis". Such changes have been incorporated in the 1959 reporting of notifiable diseases.

* Prepared in the Public Health Section of the Health and Welfare Division, Dominion Bureau of Statistics.

10.—Reported Cases of Selected Notifiable Diseases and Rates per 100,000 Population, by Province, 1958

Int. List No.	Disease	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Canada ¹	
												1958	1957
NUMBER OF CASES													
087	Chickenpox.....	..	..	888	..	4,634	13,465	1,018	..	..	5,785	25,790	32,138
055	Diphtheria.....	15	..	..	1	19	2	9	3	17	..	66	142
045-048	Dysentery ²	6	67	6	18	159	152	127	28	54	942	1,562	1,179
046	Amoebic.....	..	..	..	..	..	..	..	..	..	6	8	6
045	Bacillary.....	6	67	6	17	167	152	127	28	54	936	1,563	1,162
082	Encephalomyelitis, infectious.....	8	..	..	..	1	2	5	7	2	2	27	33
480-483	Influenza, epidemic.....	..	2,736	3,289	..	..	450	227	..	..	504	7,206	255,292
085	Measles.....	350	..	3,775	..	5,496	16,608	2,355	..	3,344	3,534	35,531	49,612
057	Meningococcal meningitis and meningococemia.....	75	1	10	31	21	74	33	8	5	25	283	345
089	Mumps.....	..	..	1,063	..	3,394	5,551	1,422	..	..	1,930	13,360	22,386
080	Poliomyelitis, epidemic.....	4	..	..	4	90	20	152	3	38	12	323	273 ²
080.0	With paralysis.....	4	..	..	4	79	20	107	1	22	12	249	172
080.1		..	..	..	..	..	..	..	..	..	..	..	..
080.2	Without paralysis.....	..	..	..	..	11	45	2	2	16	..	74	95
086	Rubella (German measles).....	..	..	..	..	365	3,407	667	..	2,259	833	7,531	16,652
050,051	Scarlet fever ³	607	400	2,987	27	733	2,707	1,001	370	998	1,270	11,118	8,693
084	Smallpox.....	..	..	..	..	..	..	..	..	..	..	..	..
001-019	Tuberculosis.....	273	53	264	436	2,912	1,274	331	307	525	827	7,215	7,662
040,041	Typhoid and paratyphoid.....	4	1	2	14	198	27	7	10	11	30	304	279
044	Undulant fever.....	..	..	..	..	78	15	17	1	..	2	113	120
020-039	Veneral diseases.....	488	25	268	331	3,484	2,632	1,420	1,530	2,679	3,702	16,751	16,540
020-029	Syphilis.....	9	6	44	55	874	418	58	105	167	273	2,010	2,213
030-035	Gonorrhoea.....	479	19	224	276	2,610	2,213	1,368	1,424	2,510	3,426	14,733	14,313
036-039	Other venereal diseases.....	..	..	..	..	..	..	..	..	..	..	..	..
056	Whooping cough.....	4	275	862	5	1,303	2,152	161	82	661	1,427	6,932	7,459
RATES PER 100,000 ESTIMATED POPULATION													
087	Chickenpox.....	..	..	125.1	..	94.9	232.0	117.0	..	..	374.7	186.7	239.1
055	Diphtheria.....	3.4	..	..	0.2	0.4	4	1.0	0.3	1.4	..	0.4	0.9
045-048	Dysentery ²	1.4	67.0	0.8	3.1	3.3	2.6	14.6	3.2	4.5	61.0	9.2	7.1
046	Amoebic.....	..	..	..	..	..	..	..	..	..	0.4	..	..
045	Bacillary.....	1.4	67.0	0.8	2.9	3.2	2.6	14.6	3.2	4.5	60.6	9.1	7.0
082	Encephalomyelitis, infectious.....	1.8	..	..	..	4	4	0.6	0.8	0.2	0.1	0.2	0.2
480-483	Influenza, epidemic.....	..	2,736.0	463.2	..	..	7.8	26.1	..	..	32.6	79.8	1,770.5
085	Measles.....	79.9	..	531.7	..	112.5	286.2	270.7	..	278.4	228.9	229.8	330.2
057	Meningococcal meningitis and meningococemia.....	17.1	1.0	1.4	5.4	0.4	1.3	3.8	0.9	0.4	1.6	1.7	2.2
089	Mumps.....	..	..	149.7	..	69.5	95.7	163.4	..	..	125.0	96.7	186.6
080	Poliomyelitis, epidemic.....	0.9	..	..	0.7	1.8	0.3	17.5	0.3	3.2	0.8	1.9	1.6 ²
080.0	With paralysis.....	0.9	..	..	0.7	1.6	0.8	12.3	0.1	1.8	0.8	1.6	1.0
080.1		..	..	..	..	..	..	..	..	..	..	..	..
086	Rubella (German measles).....	..	..	..	..	7.5	58.7	76.7	..	188.1	54.0	51.1	110.8
050,051	Scarlet fever ³	138.6	400.0	420.7	4.7	15.0	46.6	115.1	41.7	83.1	82.3	65.0	52.5
084	Smallpox.....	..	..	..	..	..	..	..	..	..	..	..	..
001-019	Tuberculosis ²	62.3	53.0	37.2	75.6	59.6	22.0	38.0	34.6	43.7	53.6	42.4	46.2
040,041	Typhoid and paratyphoid.....	0.9	1.0	0.3	2.4	4.1	0.5	0.8	1.1	0.9	1.9	1.8	1.7
044	Undulant fever.....	..	..	..	..	1.6	0.3	2.0	0.1	..	0.1	0.7	0.8
020-039	Veneral diseases.....	111.4	25.0	37.7	57.4	71.3	45.4	163.2	172.3	223.1	239.8	98.4	99.8
020-029	Syphilis.....	2.1	6.0	6.2	9.5	17.9	7.2	6.7	11.8	13.9	17.7	11.8	13.4
030-035	Gonorrhoea.....	109.4	19.0	31.5	47.8	53.4	38.1	156.6	160.4	209.0	221.9	86.5	86.4
036-039	Other venereal diseases.....	..	..	..	..	..	..	..	..	0.1	0.2	0.2	0.1
056	Whooping cough.....	0.9	275.0	121.4	0.9	26.7	37.1	18.5	9.2	56.0	92.4	40.7	45.0

¹ Includes Yukon but excludes Northwest Territories.² Includes cases where type was not specified.³ Includes cases of streptococcal sore throat.⁴ Less than 0.05 per 100,000 population.

Illness in the Federal Civil Service.—A study of the incidence and duration of illness among federal civil servants is made annually from data supplied by medical certificates, which are required for all absences of more than three days at one time and for

absence of any duration after eight days of casual leave have been taken. During the calendar year 1958, of an estimated 139,800 civil servants covered by Civil Service Leave Regulations, 45,820 reported ill by medical certificate. The number of new illnesses, as certified by medical certificate, was 68,489, somewhat lower than the 71,167 reported for 1957. Similarly, the number of days of completed illnesses decreased to 1,039,449 in 1958 from the 1,127,196 reported for 1957. Other relevant statistics for 1958 indicate that, on the average, 7.5 working days were lost through illness by each employee, including 4.9 days certified and 2.6 days casual sick leave.

Several new indices related to sickness absenteeism were calculated from the 1958 survey, based on the number of certified illnesses that occurred at some time during the year but not necessarily completed during the same year. These illnesses totalled 71,175. The severity rate or average number of calendar days per illness was 14 and the average number of working days was 9.7. The frequency rate or the average number of illnesses per 100 employees was 50.9. In addition, for each working day during the year, about two of every 100 civil servants were absent on certified sick leave.

11.—Rates per 1,000 Employees of Illnesses and Days of Illness for Federal Civil Servants, by Cause, 1958

(Certified sick leave only)

Int. List No.	Cause	Rates per 1,000 Employees	
		Illnesses	Days of Illness
		No.	No.
001-133	Infective and parasitic diseases.....	13.7	393.2
140-239	Neoplasms.....	8.4	317.6
240-289	Allergic, endocrine system, metabolic, and nutritional diseases.....	10.8	190.9
290-299	Diseases of the blood and blood-forming organs.....	1.9	42.2
300-326	Mental, psychoneurotic, and personality disorders.....	13.7	421.2
330-398	Diseases of the nervous system and sense organs.....	20.2	324.9
400-468	Diseases of the circulatory system.....	26.6	888.4
470-527	Diseases of the respiratory system.....	216.6	1,680.2
530-587	Diseases of the digestive system.....	71.2	1,020.1
590-637	Diseases of the genito-urinary system.....	22.9	375.5
640-689	Deliveries and complications of pregnancy, childbirth, and the puerperium.....	2.3	28.4
690-716	Diseases of the skin and cellular tissue.....	15.6	177.8
720-749	Diseases of the bones and organs of movement.....	28.2	442.3
750-759	Congenital malformations.....	0.4	12.6
780-795	Symptoms, senility, and ill-defined conditions.....	21.6	298.1
N800-N999	Accidents, poisonings, and violence.....	32.5	508.4
	Totals, All Illnesses.....	509.1	7,147.5

PART II.—PUBLIC WELFARE AND SOCIAL SECURITY

Responsibility for social welfare is shared by all levels of government. Costly income maintenance measures such as old age security and family allowances, or programs such as unemployment insurance and the National Employment Service where nation-wide co-ordination is required are administered federally. Substantial federal aid is given to the provinces in meeting the costs of social assistance. The Federal Government also provides services for special groups such as Indians, Eskimos and immigrants.

The Department of National Health and Welfare is the agency generally responsible for federal welfare matters; the Departments of Veterans Affairs, Citizenship and Immigration, and Northern Affairs and National Resources also operate important programs. The Unemployment Insurance Commission is responsible for the operation of unemployment insurance and the National Employment Service.

Administration of welfare services is primarily a responsibility of the province but the provision of services is often assumed by local authorities, generally with financial aid from the province.

Section 1.—Federal Government Programs

Subsection 1.—Family Allowances

The Family Allowances Act of 1944 is designed to assist in providing equal opportunity for all Canadian children. The allowances do not involve a means test and are paid entirely from the federal Consolidated Revenue Fund. They do not constitute taxable income but there is a smaller income tax exemption for children eligible for allowances.

Allowances are payable in respect of every child under the age of 16 years who was born in Canada, or who has been a resident of the country for one year, or whose father or mother was domiciled in Canada for three years immediately prior to the birth of the child. Payment is made each month, normally to the mother, although any person who substantially maintains the child may be paid the allowance on his behalf. Allowances are paid at the monthly rate of \$6 for each child under 10 years of age and \$8 for each child 10 or over but under 16 years. The allowances are paid by cheque, except for some Eskimo and Indian children in remote areas for whom payment is made largely in kind because of lack of exchange facilities and the desirability for education in the use of nutritive foods.

If the allowances are not spent for the purposes outlined in the Act, payment may be discontinued or made to some other person or agency on behalf of the child. Allowances are not payable for any child who fails to comply with provincial school regulations or on behalf of a girl who is married and under 16 years of age.

The program is administered by the Department of National Health and Welfare through regional offices located in each provincial capital. A welfare section in each regional office deals with welfare questions arising from administration of the allowances. Issuing of the cheques is the responsibility of the treasury division of each regional office, which reports to the Chief Treasury Officer of the Department of Finance attached to the Department of National Health and Welfare. The Regional Director for the Yukon and Northwest Territories is located in Ottawa.

Through the Department of Citizenship and Immigration, the Federal Government pays family assistance at the rate of \$5 a month for each child under 16 years of age supported by an immigrant who has landed for permanent residence in Canada, or by a Canadian returning to Canada to reside permanently. This allowance, which is paid quarterly and for a maximum period of one year, is not payable to a child receiving family allowances.

1.—Family Allowances Statistics, by Province, Years Ended Mar. 31, 1957-59

Province and Year	Families Receiving Allowance in March	Children for Whom Allowance Paid in March	Average Number of Children per Family in March	Average Allowance ¹		Net Total Allowances Paid during Fiscal Year
				Per Family	Per Child	
	No.	No.	No.	\$	\$	\$
Newfoundland.....1957	59,572	181,237	3.04	18.31	6.02	12,881,415
1958	60,961	187,035	3.07	20.40	6.65	14,131,153
1959	62,203	192,030	3.09	20.57	6.66	15,162,900
Prince Edward Island...1957	13,067	36,173	2.77	16.86	6.09	2,640,585
1958	13,240	36,839	2.78	18.61	6.69	2,824,310
1959	13,443	37,426	2.78	18.72	6.72	2,994,334
Nova Scotia.....1957	99,957	248,827	2.49	15.13	6.08	17,973,392
1958	101,509	253,713	2.50	16.71	6.68	19,400,493
1959	103,105	258,684	2.51	16.79	6.69	20,560,462

¹ Based on gross payment for March.

1.—Family Allowances Statistics, by Province, Years Ended Mar. 31, 1957-59—concluded

Province or Territory and Year	Families Receiving Allowance in March	Children for Whom Allowance Paid in March	Average Number of Children per Family in March	Average Allowance ¹		Net Total Allowances Paid during Fiscal Year
				Per Family	Per Child	
	No.	No.	No.	\$	\$	\$
New Brunswick.....1957	77,833	218,703	2.81	17.05	6.07	15,779,360
.....1958	79,237	224,047	2.83	18.89	6.68	17,074,970
.....1959	80,857	229,505	2.84	19.00	6.69	18,201,518
Quebec.....1957	642,573	1,729,386	2.69	16.39	6.09	124,368,344
.....1958	664,852	1,786,800	2.69	18.02	6.70	136,080,634
.....1959	686,872	1,848,138	2.69	18.01	6.69	146,278,435
Ontario.....1957	800,279	1,734,813	2.17	13.05	6.02	122,539,123
.....1958	833,495	1,825,274	2.19	14.59	6.66	136,706,314
.....1959	870,582	1,922,653	2.21	14.69	6.65	150,186,253
Manitoba.....1957	122,386	276,912	2.26	13.65	6.03	19,888,717
.....1958	124,257	283,863	2.28	15.22	6.66	21,520,778
.....1959	126,989	292,697	2.30	15.34	6.66	23,091,594
Saskatchewan.....1957	126,271	298,085	2.36	14.31	6.06	21,644,971
.....1958	127,904	306,045	2.39	15.89	6.64	23,241,829
.....1959	130,210	313,926	2.41	16.03	6.65	24,789,278
Alberta.....1957	172,533	395,234	2.29	13.76	6.00	27,953,311
.....1958	179,237	414,550	2.31	15.36	6.64	31,029,730
.....1959	187,561	437,883	2.33	15.51	6.64	34,122,637
British Columbia.....1957	207,626	440,749	2.12	12.86	6.06	31,020,472
.....1958	217,009	466,169	2.15	14.35	6.68	34,969,036
.....1959	225,492	488,891	2.17	14.49	6.68	38,409,308
Yukon and Northwest Territories.....1957	4,794	11,317	2.36	14.00	5.93	819,150
.....1958	5,033	12,045	2.39	15.87	6.63	907,321
.....1959	5,267	13,423	2.55	17.21	6.75	990,349
Canada.....1957	2,326,891	5,571,436	2.39	14.49	6.05	397,517,840
.....1958	2,406,734	5,796,380	2.41	16.08	6.68	437,886,560
.....1959	2,492,581	6,035,256	2.42	16.15	6.67	474,787,068

¹ Based on gross payment for March.

Subsection 2.—Old Age Security

The Old Age Security Act of 1952, as amended, provides a universal pension of \$55 a month, payable by the Federal Government to all persons aged 70 or over, subject to a residence qualification. To qualify for pension a person must have resided in Canada for ten years immediately preceding its commencement or, if absent during that period, must have been actually present in Canada prior to it for double any period of absence and must have resided in Canada at least one year immediately preceding commencement of pension. A 1960 amendment to the Act provides that payment of pension may be continued for any period of residence outside Canada if a pensioner has resided in Canada for at least 25 years after attaining the age of 21 or, if he has not, it may be continued for six consecutive months exclusive of the month of departure from Canada.

Until Jan. 1, 1959, the pension was financed on a pay-as-you-go method through a 2-p.c. sales tax, a 2-p.c. tax on corporation income and, subject to a limit of \$60 a year, a 2-p.c. tax on personal income. Effective Jan. 1, 1959, the tax on corporation income and from Apr. 9, 1959, the sales tax, were raised to 3 p.c. The rate on taxable personal income was raised, as from July 1, 1959, to 2.5 p.c., with a maximum of \$75 for 1959. Beginning with 1960, the rate on taxable personal income was raised to 3 p.c., with a maximum of \$90 a year. Taxes are paid into the Old Age Security Fund. If they are insufficient to meet

the pension payments, temporary loans or grants are made from the Consolidated Revenue Fund. The pension is paid from the Consolidated Revenue Fund and charged to the Old Age Security Fund. The program is administered by the Department of National Health and Welfare through regional offices located in each provincial capital.

Persons in receipt of old age assistance (see p. 314) who reach age 70 are automatically transferred to old age security. Others make application to the regional office.

British Columbia, Alberta and Saskatchewan make supplementary payments to those recipients of old age security who qualify under a means and residence test. In British Columbia the allowance may not exceed \$24 a month, in Alberta \$15 a month, and in Saskatchewan it is a minimum of \$2.50 a month rising to a maximum of \$10 a month. In Ontario, the provincial government shares to the extent of 80 p.c. in the first \$20 a month of supplement paid by a municipality to a needy recipient of old age security. In Manitoba, the province may reimburse a municipality for 80 p.c. of the supplementary assistance paid to needy recipients of old age security. In some provinces and in Yukon Territory, recipients of the pension who are in special need may be eligible for relief.

2.—Operations of the Old Age Security Fund, Years Ended Mar. 31, 1955-59

Item	Year Ended Mar. 31—				
	1955	1956	1957	1958	1959
	\$	\$	\$	\$	\$
Revenue	353,205,333	366,218,474	379,111,374	473,859,104	559,279,858
Individual income tax.....	100,900,000	102,500,000	124,999,000	135,001,000	146,350,000
Corporation income tax.....	46,000,000	53,328,000	67,336,000	60,664,000	55,328,000
Sales tax.....	143,053,678	160,377,617	179,270,141	175,792,442	173,622,697
Grant from Consolidated Revenue Fund.....	—	—	6,000,000	102,401,662	183,979,162
Loan from Consolidated Revenue Fund.....	63,251,655 ¹	50,012,857 ¹	1,506,233 ¹	—	—
Expenditure (Benefit Payments)	353,205,333	366,218,474	379,111,374	473,859,104	559,279,858

¹ Loans from Consolidated Revenue were written off by grants from the Consolidated Revenue Fund in following fiscal years.

3.—Old Age Security Statistics, by Province, Years Ended Mar. 31, 1957-59

Province and Year	Pensioners in March	Pensions Paid during Fiscal Year (net)	Province or Territory and Year	Pensioners in March	Pensions Paid during Fiscal Year (net)
	No.	\$		No.	\$
Newfoundland.....1957	16,248	7,738,205	Manitoba.....1957	47,908	22,842,472
1958	16,557	9,490,737	1958	50,079	28,562,399
1959	16,782	11,012,906	1959	52,066	34,029,850
Prince Edward Island..1957	6,993	3,371,370	Saskatchewan.....1957	48,984	23,334,799
1958	7,100	4,139,668	1958	51,300	29,420,360
1959	7,153	4,809,942	1959	53,469	35,099,989
Nova Scotia.....1957	38,860	18,706,153	Alberta.....1957	50,524	23,942,472
1958	39,694	23,008,418	1958	53,319	30,443,217
1959	40,395	26,780,353	1959	55,968	36,534,769
New Brunswick.....1957	28,170	13,528,005	British Columbia.....1957	99,320	46,923,834
1958	28,956	16,747,674	1958	104,297	59,408,009
1959	29,509	19,583,702	1959	108,396	70,769,169
Quebec.....1957	168,407	79,650,588	Yukon and North-west Territories. 1957	579	280,680
1958	174,476	99,490,164	1958	599	344,305
1959	179,829	116,993,184	1959	623	408,856
Ontario.....1957	291,493	138,792,796	Canada.....1957	797,486	379,111,374
1958	301,183	172,804,152	1958	827,560	473,859,103
1959	310,094	203,257,138	1959	854,284	559,279,858

Subsection 3.—Government Annuities*

Under the Government Annuities Act (RSC 1952, c. 132) passed in 1908, the Federal Government carries on a service to assist Canadians to make provision for old age. The Act is administered by the Minister of Labour.

A Canadian Government annuity is a fixed yearly income purchased from and paid by the Government of Canada. The annuity is payable in monthly instalments for life, or for life and guaranteed for a period of years. The minimum annuity is \$10 and the maximum \$1,200 a year or the actuarial equivalent if the annuity is to reduce by the amount of payments under the Old Age Security Act. Annuity contracts may be deferred or immediate. Deferred annuities are purchased by periodic or single premiums. Immediate annuity contracts provide immediate income. Annuities may be arranged to reduce by \$55 a month at age 70 to fit in with payments under the Old Age Security Act.

The property and interest of the annuitant are neither transferable nor attachable. In the event of the death of the annuitant before a deferred annuity vests, all money paid is refunded with interest. Provision is made in the Act for group annuity contracts whereby employers may contract for the purchase of annuities on behalf of their employees, or associations on behalf of their members, the purchase money being derived partly from wages and partly from employer contributions or entirely from employer contributions. Group annuity plans now in effect cover a variety of industries and many municipal corporations throughout Canada. Annuities arising from individual contracts may be taxable in either of two ways: (1) if registered under Sect. 79B of the Income Tax Act for tax exemption on premiums, the annuity is fully taxable, or (2) if not registered the annuity is taxable on the interest portion only. Annuities arising from approved pension plans are fully taxable but the employee and the employer are entitled to tax exemption year by year on their annual contributions to the pension plan.

From Sept. 1, 1908, the date of the inception of the system, to Mar. 31, 1959, the total number of annuity contracts and certificates issued, excluding replacements, was 475,402. On the latter date 78,986 annuities were being paid amounting to \$41,497,049 annually and 343,957 deferred annuities were being purchased. The net total amount of purchase money received up to Mar. 31, 1959 was \$1,165,795,515.

Up to Mar. 31, 1959, 1,195 corporations, institutions and associations, as compared with 1,133 up to Mar. 31, 1958, had entered into agreements with the Government to purchase annuities. Under these arrangements 204,853 employees or members were holding certificates for purchase of deferred annuities as compared with 192,820 one year earlier. The number of group certificates issued in the year ended Mar. 31, 1959 was 18,043 as compared with 11,236 for 1957-58.

* Revised in the Government Annuities Branch, Department of Labour, Ottawa.

4.—Individual Annuity Contracts and Certificates Issued and Net Receipts, Years Ended Mar. 31, 1955-59, with Cumulative Totals for 1908-59

Year Ended Mar. 31—	Individual Contracts Issued	Group Certificates Issued	Total Contracts and Certificates Issued	Net Receipts
	No.	No.	No.	\$'000
1908-54 ¹	156,468	212,222	368,690	837,666
1955.....	6,242	18,300	24,542	68,594
1956.....	6,799	18,672	22,471	69,945
1957.....	5,937	12,476	18,413	64,421
1958.....	6,701	11,236	17,937	62,149
1959.....	5,306	18,043	23,349	63,017
Totals, 1908-59.....	187,453	287,949	475,402	1,165,795

¹ Sept. 1, 1908 to Mar. 31, 1954.

5.—Government Annuity Fund Statements, Years Ended Mar. 31, 1955-59

Item	1955	1956	1957	1958	1959
	\$	\$	\$	\$	\$
Assets					
Fund at beginning of fiscal year.....	798,454,014	864,543,038	930,221,101	989,285,939	1,047,641,226
Receipts during the year, less payments.....	66,089,024	65,678,063	59,064,838	58,355,287	58,183,850
Fund at end of fiscal year.....	864,543,038	930,221,101	989,285,939	1,047,641,226	1,105,825,076
Liabilities					
Value of outstanding contracts.....	864,543,038	930,221,101	989,285,939	1,047,641,226	1,105,825,076
Receipts					
Immediate annuities.....	8,086,323	9,171,329	5,943,037	4,900,533	5,782,225
Deferred annuities.....	61,956,789	61,405,964	58,982,047	57,779,568	57,783,026
Interest on fund.....	31,638,652	34,064,769	36,322,665	38,448,256	40,710,603
Amount transferred to maintain reserve.....	371,521	—	—	1,184,467	157,565
Totals, Receipts.....	102,053,285	104,642,062	101,247,749	102,312,824	104,433,419
Payments					
Payments under vested annuity contracts.....	31,943,115	34,498,070	36,963,652	39,056,390	41,177,423
Return of premiums with interest.....	2,572,284	3,033,205	3,252,738	3,664,920	3,915,022
Return of premiums without interest.....	1,448,862	1,317,682	1,177,408	1,225,048	1,152,124
Unclaimed annuities transferred to Consolidated Revenue Fund.....	—	—	29,398	11,179	5,000
Surplus transferred to Consolidated Revenue Fund.....	—	115,042	759,715	—	—
Totals, Payments.....	35,964,261	38,963,999	42,182,911	43,957,537	46,249,569

6.—Numbers and Values of Annuity Contracts, as at Mar. 31, 1958 and 1959

Classification	1958			1959		
	Contracts	Amount of Annuities	Value at Mar. 31 of Contracts in Force	Contracts	Amount of Annuities	Value at Mar. 31 of Contracts in Force
	No.	\$	\$	No.	\$	\$
Vested ordinary.....	35,305	14,842,997	126,822,011	37,657	15,865,690	133,790,685
Vested guaranteed.....	32,189	18,164,843	202,779,349	32,216	18,389,782	204,498,350
Vested last survivor.....	4,125	2,104,453	26,929,814	4,021	2,065,504	26,215,479
Vested reducing at age 70...	4,348	4,274,377	32,860,537	5,092	5,176,073	38,267,693
Deferred.....	327,396	¹	658,249,515	343,957	¹	703,052,869
Totals.....	403,857	39,386,670	1,047,641,226	422,943	41,497,049	1,105,825,076

¹ Undetermined.

Subsection 4.—Other Federal Government Programs

Unemployment Insurance and National Employment Service.—In 1940, by an amendment to the British North America Act, the Federal Government was given jurisdiction in the field of unemployment insurance and the Unemployment Insurance Act was passed, establishing a national system of unemployment insurance which is outlined in Chapter XVII.

The National Employment Service is operated in conjunction with the unemployment insurance scheme. It is administered through local employment and claims offices and supervised by the Department of Labour. Statistics of positions offered and placements made are given in Chapter XVII.

Prairie Farm Assistance.—The Prairie Farm Assistance Act is administered by the Department of Agriculture; a description of the legislation is given in Chapter IX.

Welfare Services for Indians and Eskimos.—The welfare of Indians and Eskimos is administered by the Department of Citizenship and Immigration and the Department of Northern Affairs and National Resources, respectively; this field is covered in the Population Chapter, pp. 201-210.

Section 2.—Federal-Provincial Programs

Subsection 1.—Old Age Assistance

The Old Age Assistance Act of 1952, as amended November 1957, provides for federal reimbursement to the provinces for assistance to persons aged 65 or over who are in need and who have resided in Canada for at least ten years or who, if absent from Canada during this period, have been present in Canada prior to the commencement of the ten-year period for double any period of absence. On reaching age 70 a pensioner is transferred to old age security. The federal contribution may not exceed 50 p.c. of \$55 a month or of the assistance paid, whichever is less. The province administers the program and, within the limits of the federal Act, may fix the amount of assistance payable, the maximum income allowed and other conditions of eligibility. All provinces and territories pay a maximum \$55 a month.

For an unmarried person, total income allowed, including assistance, may not exceed \$960 a year. For a married couple it may not exceed \$1,620 a year or, when the spouse is blind within the meaning of the Blind Persons Act, \$1,980 a year. Assistance is not paid to a person receiving an old age security pension or an allowance under the Blind Persons Act, the Disabled Persons Act, or War Veterans Allowance Act.

British Columbia, Alberta and Yukon Territory make supplementary payments to recipients of old age assistance who qualify under a means and residence test. In British Columbia the allowance may not exceed \$20 a month, in Alberta \$15 a month, and in the Yukon \$10 a month. In Ontario, the provincial government shares to the extent of 80 p.c. in the first \$20 a month of the supplement paid by a municipality to a needy recipient of old age assistance. In Manitoba, the province is empowered to reimburse a municipality for 80 p.c. of the supplementary assistance it pays to recipients of old age assistance. In some provinces and in the Yukon, recipients of old age assistance who are in special need may be eligible for relief.

7.—Old Age Assistance Statistics, by Province, Years Ended Mar. 31, 1957-59

Province and Year		Recipients in Month of March	Average Amount of Monthly Assistance	P.C. of Recipients to Population Age 65-69	Federal Government Contribution during Year
		No.	\$		\$
Newfoundland.....	1957	4,893	38.08 ¹	52.61	1,016,721 ²
	1958	5,119	53.63 ³	57.52	1,298,770
	1959	5,378	53.20	61.11	1,715,386
Prince Edward Island.....	1957	580	28.04	17.53	93,220 ²
	1958	659	45.55 ³	19.97	142,258
	1959	756	44.45	22.24	191,759
Nova Scotia.....	1957	4,950	33.95	25.26	1,026,319 ²
	1958	5,219	50.15 ³	26.10	1,318,055
	1959	5,485	49.40	27.29	1,611,693

For footnotes, see end of table.

7.—Old Age Assistance Statistics, by Province, Years Ended Mar. 31, 1957-59—concluded

Province or Territory and Year	Recipients in Month of March	Average Amount of Monthly Assistance	P.C. of Recipients to Population Age 65-69	Federal Government Contribution during Year
	No.	\$		\$
New Brunswick.....1957	5,624	36.92	37.74	1,276,064 ^r
.....1958	5,724	52.46 ²	37.17	1,559,905
.....1959	5,795	51.62	37.63	1,829,266
Quebec.....1957	31,031	37.47	30.01	7,159,030 ^r
.....1958	32,318	52.45 ²	30.84	8,702,893
.....1959	34,134	51.88	32.23	10,593,250
Ontario.....1957	20,744	36.93	12.59	4,677,968 ^r
.....1958	21,077	51.76 ²	12.56	5,650,281
.....1959	22,381	48.96	13.28	6,707,318
Manitoba.....1957	4,560	37.88	16.17	1,065,848 ^r
.....1958	4,474	53.37 ²	15.48	1,297,115
.....1959	4,836	51.98	17.27	1,572,890
Saskatchewan.....1957	4,963	37.11	17.35	1,159,833 ^r
.....1958	5,129	52.52 ²	17.45	1,435,188
.....1959	5,537	51.35	19.50	1,763,549
Alberta.....1957	5,400	36.14	17.88	1,220,050 ^r
.....1958	5,715	51.33 ²	18.26	1,538,751
.....1959	6,096	50.62	19.54	1,877,243
British Columbia.....1957	7,029	37.67	13.73	1,669,790 ^r
.....1958	6,906	52.91 ²	12.86	1,979,058
.....1959	7,276	51.96	13.73	2,291,662
Yukon Territory.....1957	31	40.00	16.67 ^r	6,640
.....1958	41	46.00 ³	21.47	9,726
.....1959	38	55.00	19.90	13,280
Northwest Territories.....1957	102	37.96	59.30 ^r	22,619 ^r
.....1958	103	53.99 ²	48.58	29,385
.....1959	124	51.20	58.49	39,989
Canada.....1957	89,907	37.03	19.81	20,399,105^r
.....1958	92,484	52.19	19.94	24,961,383
.....1959	97,836	50.97	20.91	30,207,284

¹ During fiscal year maximum assistance was raised from \$30 to \$40 per month.

² During fiscal year maximum raised from \$40 to \$55 a month.

³ During fiscal year monthly maximum raised from \$40 to \$46; raised to \$55 in May 1958, retroactive to Nov. 1, 1957.

Subsection 2.—Allowances for Blind Persons

The Blind Persons Act of 1952, as amended November 1957, provides for federal reimbursement to the provinces for allowances to blind persons aged 18 or over who are in need and who have resided in Canada for at least ten years. The federal contribution may not exceed 75 p.c. of \$55 a month or of the allowance paid, whichever is less. The province administers the program and, within the limits of the federal Act, may fix the amount of allowance payable and the maximum income allowed. All provinces pay a maximum of \$55 a month.

To qualify for an allowance a person must meet the required definition of blindness and have resided in Canada for ten years immediately preceding commencement of allowance or, if absent from Canada during this period, must have been present in Canada prior to its commencement for a period equal to double any period of absence.

For an unmarried person, total income including the allowance may not exceed \$1,200 a year; for a person with no spouse but with one or more dependent children, \$1,680; for a married couple, \$1,980. When the spouse is also blind, income of the couple may not exceed \$2,100. Allowances are not payable to a person receiving assistance under the Old Age Assistance Act, an allowance under the Disabled Persons Act or the War Veterans Allowance Act, a pension under the Old Age Security Act or a pension for blindness under the Pensions Act.

British Columbia, Alberta, Saskatchewan and Yukon Territory make supplementary payments to recipients of blindness allowances who qualify under income and residence tests. In British Columbia a flat rate allowance of \$24 a month is payable, in Alberta the supplement may not exceed \$15 a month, and in the Yukon \$10 a month. In Saskatchewan, a minimum of \$2.50 a month is payable, rising to a maximum of \$10 a month. In Ontario, the government shares to the extent of 80 p.c. in the first \$20 a month paid by a municipality to a needy recipient. In Manitoba, the province is empowered to reimburse a municipality for 80 p.c. of the supplementary assistance it pays to recipients of allowances for blind persons. In some provinces and in the Yukon, recipients in special need may also be eligible for relief.

8.—Statistics of Allowances for the Blind, by Province, Years Ended Mar. 31, 1957-59

Province and Year	Recipients in Month of March	Average Amount of Monthly Allowance	P.C. of Recipients to Population Age 20-69	Federal Government Contribution during Year
	No.	\$		\$
Newfoundland.....1957	370	39.47	0.186	132,572 ^r
.....1958	376	54.45 ¹	0.190	152,688
.....1959	407	54.41	0.197	199,975
Prince Edward Island.....1957	90	37.38	0.170	31,267
.....1958	96	53.13 ¹	0.198	37,568
.....1959	87	53.48	0.174	43,338
Nova Scotia.....1957	714	39.25	0.194	258,095 ^r
.....1958	745	53.92 ¹	0.204	312,969
.....1959	787	53.40	0.214	376,544
New Brunswick.....1957	719	39.53	0.251	258,382 ^r
.....1958	715	53.94 ¹	0.258	310,481
.....1959	724	53.90	0.252	357,742
Quebec.....1957	2,918	39.32	0.118	1,046,323 ^r
.....1958	2,956	54.41 ¹	0.117	1,264,975
.....1959	3,056	54.06	0.116	1,500,856
Ontario.....1957	1,713	39.09	0.056	613,257 ^r
.....1958	1,720	53.73 ¹	0.053	735,344
.....1959	1,833	50.75	0.054	887,247
Manitoba.....1957	402	39.60	0.083	147,725
.....1958	392	54.33 ¹	0.082	170,031
.....1959	409	53.51	0.085	198,649
Saskatchewan.....1957	399	38.80	0.081	141,839 ^r
.....1958	412	53.32 ¹	0.088	176,095
.....1959	417	53.01	0.088	203,034
Alberta.....1957	418	39.25	0.070	151,071
.....1958	451	53.63 ¹	0.071	188,604
.....1959	464	53.22	0.070	223,721
British Columbia.....1957	482	39.17	0.062	169,387
.....1958	505	53.67 ¹	0.059	213,809
.....1959	530	53.61	0.060	248,774

For footnote, see end of table.

8.—Statistics of Allowances for the Blind, by Province, Years Ended Mar. 31, 1957-59—
concluded

Territory and Year	Recipients in Month of March	Average Amount of Monthly Allowance	P.C. of Recipients to Population Age 20-69	Federal Government Contribution during Year
	No.	\$		\$
Yukon Territory.....	1957	6	40.00	2,160
	1958	5	46.00 ²	2,300
	1959	5	55.00	2,506
Northwest Territories.....	1957	25	38.60	7,447
	1958	27	51.85 ¹	10,861
	1959	28	51.96	12,746
Canada.....	1957	8,256	39.24	2,959,526²
	1958	8,400	54.02	3,575,724
	1959	8,747	53.15	4,235,131

¹ During fiscal year maximum assistance was raised from \$40 to \$55 a month.² During fiscal year maximum raised from \$40 to \$46 a month; raised to \$55 a month in May 1958, retroactive to Nov. 1, 1957.

Subsection 3.—Allowances for Disabled Persons

The Disabled Persons Act of 1954, as amended November 1957, provides for federal reimbursement to the provinces for allowances paid to permanently and totally disabled persons aged 18 or over who are in need and who have resided in Canada for at least ten years immediately preceding commencement of allowance or, if absent from Canada during this period, have been present in Canada prior to its commencement for a period equal to double any period of absence. To qualify for an allowance a person must meet the definition of permanent and total disability set out in the Regulations to the Act. The federal contribution may not exceed 50 p.c. of \$55 a month or of the allowance paid, whichever is less. All provinces and territories pay a maximum of \$55 a month. The province administers the program and, within the limits of the federal Act, may fix the amount of allowance payable, the maximum income allowed and other conditions of eligibility.

For an unmarried person, total income including the allowance may not exceed \$960 a year. For a married couple the limit is \$1,620 a year except that if the spouse is blind within the meaning of the Blind Persons Act, income of the couple may not exceed \$1,980 a year. Allowances are not paid to a person receiving an allowance under the Blind Persons Act or the War Veterans Allowance Act, assistance under the Old Age Assistance Act, a pension under the Old Age Security Act, or a mother's allowance.

The definition of permanent and total disability employed under the Act requires that a person must be suffering from a major physiological, anatomical or psychological impairment, verified by objective medical findings. The impairment must be one that is likely to continue indefinitely without substantial improvement and that will severely limit activities of normal living.

The allowance is not payable to a patient in a mental institution or tuberculosis sanatorium. A recipient who is resident in a nursing home, an infirmary, a home for the aged, an institution for the care of incurables or a private, charitable or public institution is eligible for the allowance only if the major part of the cost of his accommodation is being paid by himself or any other individual. When a recipient is required to enter a public or private hospital, the allowance may be paid for no more than two months of hospitalization in a calendar year, excluding months of admission and release, but for the period that a recipient is in hospital for therapeutic treatment for his disability or rehabilitation, as approved by the provincial authority, the allowance may continue to be paid. The

provincial authority must suspend the payment of the allowance when in its opinion the recipient unreasonably neglects or refuses to comply with or to avail himself of training, rehabilitation or treatment facilities provided by or available in the province.

In the fourth year of the program, disabilities in the two medical classes, mental, psychoneurotic and personality disorders, and diseases of the nervous system and sense organs were again found to be most prevalent among those persons becoming eligible for an allowance. These classes alone accounted for 47.5 p.c. of the new cases, an increase over the 41 p.c. in the year ended Mar. 31, 1958. Other classes, however, such as diseases of the bones and organs of movement, and diseases of the circulatory system, continued to decline. Mental deficiency, the most frequently occurring disability, rose from one-sixth to over one-fifth of all cases granted an allowance.

British Columbia pays a flat rate supplement of \$24 a month to recipients of disability allowances who qualify under a residence test. In Ontario, the government shares to the extent of 80 p.c. in the first \$20 a month paid by a municipality to a needy recipient. In Manitoba, the province is empowered to reimburse a municipality for 80 p.c. of the supplementary assistance it pays to needy recipients of disability allowances. In some provinces and in Yukon Territory, recipients in special need may also be eligible for relief.

9.—Statistics of Allowances for Disabled Persons, by Province, Years Ended Mar. 31, 1957-59

Province or Territory and Year	Recipients in Month of March	Average Amount of Monthly Allowance	P.C. of Recipients to Population Age 20-69	Federal Government Contribution during Year
	No.	\$		\$
Newfoundland.....1957	720	39.44	0.363	163,167
.....1958	822	54.78 ¹	0.415	205,845
.....1959	980	54.69	0.475	302,224
Prince Edward Island.....1957	345	33.94	0.652	65,690
.....1958	460	52.12 ¹	0.950	113,222
.....1959	596	51.28	1.194	189,016
Nova Scotia.....1957	1,465	35.69	0.399	290,339
.....1958	1,790	52.56 ¹	0.491	456,948
.....1959	2,184	52.65	0.593	662,727
New Brunswick.....1957	1,262	39.43	0.440	281,859
.....1958	1,474	54.62 ¹	0.531	404,650
.....1959	1,734	54.24	0.603	552,338
Quebec.....1957	15,856	38.97	0.642	3,593,395
.....1958	22,929	53.75 ¹	0.905	6,048,901
.....1959	25,352	53.94	0.961	8,362,518
Ontario.....1957	8,065	39.27	0.262	1,853,110
.....1958	9,412	54.24 ¹	0.289	2,523,956
.....1959	11,469	53.88	0.339	3,485,924
Manitoba.....1957	819	39.23	0.169	192,867
.....1958	1,028	54.36 ¹	0.215	273,555
.....1959	1,230	54.14	0.255	381,004
Saskatchewan.....1957	988	38.68	0.200	221,966
.....1958	1,146	54.20 ¹	0.244	317,011
.....1959	1,248	54.15	0.264	405,443
Alberta.....1957	1,245	38.17	0.209	276,593
.....1958	1,492	53.59 ¹	0.235	396,826
.....1959	1,648	53.09	0.248	515,932
British Columbia.....1957	1,067	39.01	0.138	227,926
.....1958	1,281	54.18 ¹	0.150	349,100
.....1959	1,585	53.98	0.179	490,156
Yukon Territory.....1957	...	...	...	...
.....1958	...	...	...	...
.....1959	2	55.00	0.028	192
Northwest Territories.....1957	3	40.00	0.035	440
.....1958	6	55.00	0.058	1,651
.....1959	12	54.58	0.112	2,893
Canada.....1957 ²	31,835	38.84	0.361	7,167,352
.....1958 ²	41,840	53.88	0.459	11,091,664
.....1959	48,040	53.84	0.508	15,330,368

¹ During fiscal year maximum payment increased from \$40 to \$55 a month.

² Excluding Yukon Territory.

Subsection 4.—Unemployment Assistance

Under the Unemployment Assistance Act of 1956 as amended, the Federal Government may share with a province and its municipalities 50 p.c. of the cost of financial assistance to unemployed persons. A 1957 amendment deleted a provision under which federal reimbursement is made only in respect of recipients in excess of 0.45 p.c. of the provincial population. No distinction is made in the legislation between the employable and the unemployable.

Reimbursement is made to the province for payments within the existing provincial framework of general assistance. The scale and conditions of relief payments to recipients continue to be determined by the provinces and municipalities, except that the province agrees not to make length of residence a condition for the receipt of assistance when an applicant comes from another province which has signed a similar agreement.

The Act excludes federal reimbursement for payments for persons receiving mothers' allowances. While it also generally excludes inmates of public and charitable institutions, it provides for federal sharing of provincial and municipal payments for those in certain types of homes for special care. Those receiving various types of social security payments under other programs are also excluded but the Federal Government shares with the provinces any additional relief payments, other than cost-of-living bonuses or across-the-board pension supplements, made to such persons who are unemployed and in need. Health care and administration costs are also excluded from Federal Government reimbursement.

Agreements for the payment of federal assistance, effective July 1, 1955, were made with five provinces—Newfoundland, Prince Edward Island, Manitoba, Saskatchewan and British Columbia. New Brunswick and Ontario entered the scheme, effective Jan. 1, 1956 and Dec. 1, 1956, respectively; and Nova Scotia and Alberta, effective Jan. 1, 1958. At the end of 1958 the Northwest Territories signed an agreement effective Jan. 1 of that year and in 1959 Quebec and Yukon Territory entered into agreements effective July 1, 1958 and Jan. 1, 1959, respectively. All parts of Canada were thus participating in the program in 1959, though at the end of the year reimbursement claims covering the period of the agreement had not been received from Quebec or the Yukon.

10.—Unemployment Assistance, by Province, Years Ended Mar. 31, 1957-59

Province and Year	Federal Share of Unemployment Assistance Costs	Recipients in March	Province or Territory and Year	Federal Share of Unemployment Assistance Costs	Recipients in March
	\$	No.		\$	No.
Newfoundland.....1957	1,562,058	39,489	Manitoba.....1957	668,652	9,836
1958	1,787,626	45,799	1958	549,842 ⁴	..
1959	3,040,767	58,264	1959	1,604,219	16,065
Prince Edward Island....1957	54,036	1,532	Saskatchewan.....1957	512,678	10,123
1958	73,010	1,724	1958	813,080	12,873
1959	67,726	1,418	1959	1,420,618	15,507
Nova Scotia.....1958 ¹	76,179	5,083	Alberta.....1958 ¹	—	—
1959	298,458	9,209	1959	1,858,633	15,899
New Brunswick.....1957	32,887	3,797	British Columbia.....1957	2,299,894	21,289
1958	94,217	5,800	1958	2,828,568	24,341
1959	180,614	7,589	1959	6,136,935	39,398
Quebec.....1959 ²	—	—	Yukon Territory.....1959 ³	—	—
Ontario.....1957 ³	640,103	37,512	Northwest Territories..1959	5,921	157
1958	3,617,332	61,623	Totals.....1957	5,770,310	123,578
1959	9,325,564	79,385	1958	9,839,854	157,243
			1959	23,939,455	242,881

¹ Agreement effective from Jan. 1, 1958.² Agreement effective from July 1, 1958; no federal payments in the year ended Mar. 31, 1959.³ Agreement effective from Dec. 1, 1956.⁴ Eight months only.⁵ Agreement effective from Jan. 1, 1959; no federal payments in the year ended Mar. 31, 1959.

Section 3.—Provincial Programs

Subsection 1.—Mothers' Allowances

All provinces make statutory provision for allowances to needy mothers who are deprived of the breadwinner and are unable to maintain their dependent children without assistance. Mothers' allowances programs, whether set out in separate Acts or included in general assistance legislation are, in most provinces, administered as separate programs. However, in British Columbia, since Sept. 1, 1958, aid has been provided to needy mothers as to other needy persons under the social assistance program. Therefore the following remarks do not apply to British Columbia, although Table 11 includes data for that province for the year ended Mar. 31, 1958.

Subject to conditions of eligibility which vary from province to province, mothers' allowances are payable from provincial funds to applicants who are widowed or whose husbands are mentally incapacitated and, except in Alberta, to those whose husbands are physically disabled and unable to support their families. They are also payable to deserted wives who meet specified conditions; in several provinces to mothers who are divorced or legally separated; in some, to unmarried mothers; and in Ontario and Quebec to certain Indian mothers. Foster mothers may be eligible under particular circumstances in most provinces.

The number of families and children assisted and amounts of benefits paid as at Mar. 31, 1958 and 1959 are given in Table 11 and rates of benefit as at July 1959 in Table 12.

11.—Mothers' Allowances, by Province, as at Mar. 31, 1958 and 1959

Province and Year	Families Assisted	Children Assisted	Benefits Paid
	No.	No.	\$
Newfoundland.....1958	..	..	..
.....1959	3,770	10,250 ¹	2,859,072 ¹
Prince Edward Island.....1958	266	712	88,740
.....1959	276	729	128,982
Nova Scotia.....1958	2,131	5,966	1,576,585
.....1959	2,196	5,483	1,887,882
New Brunswick.....1958	2,213	6,360	1,336,043
.....1959	2,235	6,495	1,365,075
Quebec.....1958	21,766	63,121	14,611,986
.....1959	22,403	64,969	18,991,476
Ontario.....1958	8,580	20,247	8,947,401
.....1959	9,433	22,632	11,033,273
Manitoba.....1958	1,121	2,620	1,091,629
.....1959	823	2,263	1,324,993
Saskatchewan.....1958	2,279	5,792	1,573,190
.....1959	2,222	5,491	2,030,322
Alberta.....1958	1,879	4,234	1,512,651
.....1959	2,093	4,768	1,857,031
British Columbia.....1958	243	584	143,000 ²
.....1959 ³	..	..	..
Canada.....1958⁴	40,478	109,696	39,881,225
.....1959⁵	45,451	123,080	41,478,206

¹ Approximate.

² Not including an estimated \$144,000 paid as supplementation from social allowance funds.

³ Caseload transferred to social assistance and no separate figures available.

⁴ Exclusive of Newfoundland in which province allowances are paid to needy mothers under the Social Assistance Act.

⁵ Exclusive of British Columbia (see footnote 3).

12.—Maximum Monthly Rates under Provincial Mothers' Allowances Legislation, July 1959

Province	Mother and One Child	Each Additional Child	Disabled Father at Home	Family Maximum	Supplementary
Nfld.....	Food: \$33 or \$37 depending on age of child. Clothing: to \$9 for child under age 6, to \$3 for child age 6 and under age 16, to \$5 for person age 16 or over. Rent: up to \$20 monthly in rural and to \$30 monthly in urban areas. Fuel: up to \$10.	\$8 for each child under age 16, \$12 for each child age 16 or over.	\$20	None set.	In special circumstances up to \$30 a month additional if necessary for proper support of family.
P.E.I.....	\$45	\$5	No additional allowance granted.	\$75	None granted.
N.S.....	No set maximum; rates are based on average family income for community in which family lives.		Included in budget on which allowance is based.	\$90	None granted.
N.B.....	\$35	\$10	No additional allowance granted.	\$80	Director may grant an additional \$10 for rent if circumstances require it but only if allowance paid is below maximum.
Que.....	\$60	\$10	\$10	None set (minimum granted \$5).	A supplementary allowance of \$5 may be paid to a beneficiary incapable of working. Where need exists a special monthly allowance may be paid under the Quebec Public Charities Act through the municipality or a social agency. The cost is met in large part by the province, with some contribution by the municipality.

1 Allowances to needy mothers are paid under the Social Assistance Act.

12.—Maximum Monthly Rates under Provincial Mothers' Allowances Legislation, July 1959—concluded

Province	Mother and One Child	Each Additional Child	Disabled Father at Home	Family Maximum	Summary
Ont.	\$120 for mother or father and one child. \$30 for one child living with foster mother.	\$16 for 2nd child \$14 for 3rd child \$12 for 4th child \$10 for 5th child \$8 for 6th child \$25 for 2nd foster child \$15 for each additional foster child.	Included in budget on which allowance is based.	\$180	An increase in food allowance may be granted on medical recommendation. A fuel allowance of up to \$24 a month may be granted from Sept. 1 to Mar. 31. An increase of 20 p.c. in fuel allowance may be granted under special circumstances.
Man.	Food, clothing and utilities; \$47- \$59 depending on age of child. Shelter; rent to \$55, or taxes, insurance and minor repairs up to \$20 plus principal and interest on mortgage or agreement for sale and necessary repairs.	\$14 for child up to 3 years \$16 for child 4-6 years \$21 for child 7-11 years \$26 for child 12-18 years (Subject to deductions for fourth and each additional child).	\$25	None set.	\$10 monthly if family has no income. In case of extraordinary need up to \$180 a year may be granted; if housekeeper service is required this amount may be exceeded. Fuel allowance granted for eight months.
Sask.	\$60 \$35 for one child living with a guardian.	\$10 \$20 for each child living with guardian.	\$20 Also if confined to a nursing home or sanatorium.	\$150 \$170 if disabled father at home, in nursing home or sanatorium.	The local municipality may grant supplementary aid under the Social Assistance program. In unorganized territories the province assumes full cost.
Alta.	\$70	\$20 for 2nd and 3rd child \$15 for 4th to 6th child \$10 for 7th to 9th child.	Not applicable.	\$185	Municipalities of residence may grant additional aid, 80 p.c. of the cost of which is reimbursed by the province; in unorganized territories the province assumes full cost.
B.C.	Allowances to needy mothers provided with other types of allowance under the Social Assistance Act, and not separable.		...	...	...

The age limit for children varies from 15 years in one province to 18 in another with provision made in most provinces to extend payment for a specified period if the child is attending school or if he is physically or mentally handicapped. In all provinces applicants must satisfy conditions of need and residence but the amount of outside income and resources allowed and the length of residence required prior to application vary, the most common period being one year, although in one province it is five years. Three provinces have citizenship requirements.

In each province the relevant Act is administered by public welfare authorities. In some provinces a Mothers' Allowances Board or Commission makes the final decision regarding eligibility and the amount of allowances granted, or acts in an advisory capacity.

Subsection 2.—Provincial and Local Welfare Services

General assistance or relief and the various welfare services associated with this form of aid, as well as the care of the aged and the protection and care of neglected and dependent children, are governed by provincial welfare legislation. Administrative and financial responsibility is shared by the province and its municipalities to a varying extent. Provincial administration of welfare as of other provincial assistance is carried out through the department of public welfare or of health and welfare in each province. Several provincial welfare departments have established regional offices for administrative purposes and to provide consultative services to the municipalities.

Significant changes have taken place in provincial programs in the past few years. New or revised legislation or new procedures in a number of provinces have laid the foundation for improved standards of service and administration, and re-appraisal of services is continuing.

Notable program changes in the field of general assistance or residual aid have been accompanied in several provinces by re-distribution of costs between the province and the municipalities, and progress has been made in setting up minimum standards of administration and encouraging uniform rates of assistance throughout the province. The financial contribution of the Federal Government to the provinces for unemployment assistance (see p. 319) has doubtless been an important contributing factor in the realignment of provincial-municipal responsibilities.

All provinces are giving some consideration to the need for integrated planning on behalf of older citizens. A number have increased their capital or maintenance grants to municipalities and to voluntary groups for homes for the aged and are also assisting in the construction of low-rental housing projects.

The main efforts in child welfare have been directed toward improvement of standards and greater flexibility of services, with particular emphasis on preventive casework services for children in their own homes, development of specialized children's institutions and the finding of adoption homes for all children in need of them.

An impressive number of voluntary agencies also contribute to community welfare including the welfare of families and children and of groups with special needs, such as the aged, recent immigrants, youth groups, and released prisoners. Family welfare agencies or combined family and child welfare agencies in urban centers, for example, offer casework services to families in need of counselling on such problems as marital relations, parent-child relations and family budgeting. Counselling and recreational services for older or retired people are being developed by many agencies and child and youth organizations with recreational and character-building programs offer group participation in physical education, camping, the development of special skills, and other opportunities for healthful activity. Welfare councils and community planning councils contribute to the planning and co-ordinating of local welfare services.

Local voluntary agencies and institutions are usually incorporated under provincial law. They may receive public grants, depending on the nature and standard of the services they render, although, with the exception of the semi-public children's aid societies, their main support may be from united funds or community chests, or from sponsoring organizations.

Welfare services, public and private, are hampered by the continued shortage of qualified social workers. Short university courses in social work, periodic study institutes, and a more formal approach than in the past to in-service training are being developed to improve staff qualifications. A number of provincial departments are granting education leave with pay or bursaries to enable selected staff to attend schools of social work.

General Assistance.—All provinces make legislative provision for general assistance on a means-test basis to needy persons and their dependants who cannot qualify for other forms of aid, and some provinces include those whose benefits under other programs are not adequate. This assistance, with some exceptions, is administered by the municipality with substantial financial support from the province. In most provinces assistance is given for food, clothing, shelter and utilities, but it may also include incapacitation or rehabilitation allowances, post-sanatorium allowances, maintenance costs of boarding or nursing home care, counselling, and homemaking services.

The provincial departments of public welfare usually have regulatory powers over municipal administration of general assistance. Several provinces recommend rates of assistance as a guide to municipalities, and some specify rates at which payments must be paid if a municipality is to qualify for provincial reimbursement. Specified standards of administration may also be a requirement. The province may take the responsibility for aid in unorganized areas and for the cost of aid to certain categories of persons, such as transients. With the introduction of reimbursement plans designed to equalize municipal responsibility, British Columbia and Saskatchewan have abolished municipal residence requirements. In other provinces the residence of the applicant, as defined by statute, determines the financially responsible authority.

The length-of-residence requirement for social assistance is variously calculated but, in general, it is one year. Under the Unemployment Assistance Act, however, all provinces have agreed that residence shall not be a condition of assistance for applicants who come from other provinces. For other types of assistance, a person without the required length of residence in a province may be given aid by the province or the municipality, for which a chargeback may or may not be made to the municipality of residence. On the other hand, the applicant, depending on individual circumstances and the policy of the province, may be returned to his place of residence.

Various financial arrangements are in effect for sharing the costs of general assistance between the province and the municipality. In Newfoundland, such assistance is the responsibility of the province and is administered by the Department of Public Welfare. In Prince Edward Island, the Department of Welfare and Labour provides direct social assistance in rural areas and assumes 75 p.c. of the cost of assistance granted by the City of Charlottetown and the incorporated towns and villages. The Department also operates a province-wide program of financial aid to families where the breadwinner is suffering from tuberculosis and is unable to support the family. In Nova Scotia, social assistance is administered by the municipality, which receives reimbursement from the Department of Public Welfare for two-thirds of the cost of assistance given and one-half of the cost of administration. In New Brunswick, relief to needy persons is a local responsibility and may be discharged through the provision of institutional aid, although individual relief is provided by an increasing number of municipalities.

In Quebec, assistance to indigent persons is frequently given in the form of institutional care but may also be provided through some municipal departments and private agencies. Costs are shared by the provincial Department of Social Welfare, the municipality and, where applicable, by the institution. Cities and towns bear 24 p.c. of the cost, rural municipalities 15 p.c., the institution 33½ p.c., and the province the remainder. In Ontario, the

Department of Public Welfare reimburses municipalities, up to a prescribed maximum, for 80 p.c. of their expenditures on aid to needy persons and on incapacitation allowances for single needy handicapped residents.

The Social Allowance Act of Manitoba, passed in 1959, transferred from the municipalities to the province responsibility for administering and financing aid to mentally or physically incapacitated persons whose disability is likely to last more than 90 days, and to persons unable to work because of their age. Aid to other needy persons, termed "indigent relief", remains under the municipalities. The Department of Health and Public Welfare reimburses the municipalities to the extent of 40 p.c. of the costs, or at a higher rate if costs exceed a specified amount. In Saskatchewan, through the Department of Social Welfare and Rehabilitation, the province bears approximately 93 p.c. of the cost of assistance granted by the municipalities to needy persons. The municipalities are assessed annually on a per capita basis for about 7 p.c. of the over-all cost of social aid, and the province reimburses each municipality for all actual expenditures. In Alberta, the province reimburses the municipalities for 80 p.c. of the value of the assistance given. The Department of Public Welfare maintains two hostels and one welfare centre to care for unemployable single homeless men without municipal domicile.

The Province of British Columbia, through the Department of Social Welfare, reimburses the municipalities on a pooled basis for 90 p.c. of the total cost of social assistance to needy persons. Also, the province shares equally with the municipalities expenditures on salaries of social workers; a municipality with fewer than 15,000 population may arrange to have the Department undertake social work within the municipality and reimburse the Department at the rate of 30 cents per capita per year.

Care of the Aged.—Homes for the aged under provincial, municipal or voluntary auspices are provided for the aged and infirm in all provinces. Voluntary homes generally are provincially inspected in accordance with prescribed standards and in some provinces must be licensed. Most provinces contribute to the maintenance of elderly persons in homes for the aged either through general assistance or through statutes which relate particularly to these homes. Also, as previously indicated, 50 p.c. of the payments on behalf of assistance cases in homes for the aged and infirm (homes for special care) are met by the Federal Government.

Several provinces make capital grants towards the construction of homes, and in four provinces capital grants are also available to municipalities, voluntary organizations, or limited-dividend companies for the construction of low-rental housing.

Newfoundland maintains a Home for the Aged and Infirm at St. John's and also pays, in whole or in part, the cost of maintaining needy old people in homes for the aged and boarding homes. In 1955, a grant of 20 p.c. of costs, to be paid over a ten-year period, was made to a religious organization for the construction of a home, and provision is made for grants to similar projects under other auspices. The aged and infirm in Prince Edward Island are cared for in Falconwood Mental Hospital and in two provincial infirmaries. In Nova Scotia, the aged are cared for in municipal or county homes, in homes operated by religious or private organizations and in private boarding homes. The province reimburses the municipalities for two-thirds of their expenditures for the maintenance of needy persons in municipal homes, subject to compliance with specified standards of care and accommodation. Homes for the aged receiving aid from the provincial government are subject to provincial inspection. Homes for the aged in New Brunswick are operated under municipal, religious, fraternal and private auspices, and receive no direct financial support from the province. Voluntary and proprietary homes are now subject to provincial licensing and inspection and must meet standards contained in regulations under the Health Act.

Institutional care for indigent old people in Quebec is provided through charitable institutions under the Public Charities Act. The Homes for the Aged Act authorizes the province to erect and maintain homes for the aged and housing projects, or to make grants to voluntary organizations for this purpose. Standards in homes are governed by regulations under the Public Health Act.

Under the Ontario Homes for the Aged Act, municipalities must provide institutional or boarding home care for the aged. The province contributes 50 p.c. of the costs of constructing approved homes and 70 p.c. of their net operating and maintenance costs. It also pays up to 70 p.c. of the costs of maintenance in approved boarding homes. Homes for the aged under voluntary auspices are approved, inspected and assisted under the Charitable Institutions Act, which provides for grants in aid of construction equalling 50 p.c. of costs up to \$2,500 per bed and maintenance grants of 75 p.c. of the amount spent by the organization up to \$3.40 per day for each resident. The Elderly Persons Housing Aid Act provides for grants to limited-dividend housing corporations building low-rental housing for elderly persons.

Institutions and boarding homes for the aged and infirm in Manitoba are supervised and licensed by the Department of Health and Public Welfare under public health legislation. Under the Elderly Persons Housing Act, the province makes construction grants to municipalities and charitable organizations, equalling one-third of the costs of constructing or acquiring and renovating housing accommodation and homes for the aged. Grants may not exceed \$1,400 and \$1,667 for one-person and two-person housing units, respectively; \$1,200 per bed for new homes for the aged; and \$700 per bed for homes that have been renovated. Under the Social Allowances Act, 1959, the entire cost of assistance to those who, because of age or incapacity, require care by another or in a home for the aged for more than 90 days is borne by the province.

Aged and infirm persons in Saskatchewan are cared for in four provincial nursing homes and in voluntary homes for the aged. The latter are inspected and licensed under the Housing Act. This Act also empowers the province and municipalities to subscribe to the stock of limited-dividend housing companies building low-rental accommodation for older persons; the province may also make loans to municipalities to assist them in subscribing. Capital grants amounting to 20 p.c. of construction costs and maintenance grants equalling \$40 per bed per year may be made to municipalities, churches or charitable organizations sponsoring approved homes or housing projects. Costs of maintaining needy persons in homes for the aged are shared by the province and the municipalities under the Social Assistance Act.

Under what are termed "master agreements", the Province of Alberta bears the cost of constructing and equipping homes for the aged and housing units on municipal land. Projects are operated by provincially incorporated foundations which include municipal councilmen in their membership; net costs of operation are borne by the municipalities. The province also meets up to 80 p.c. of the cost incurred by municipalities for the maintenance of elderly persons in housing projects and municipal or private homes. Private homes are municipally licensed.

British Columbia operates the Provincial Home for Elderly Homeless Men, the Provincial Infirmary for the chronically ill and, for senile and psychotic patients, three provincial homes for the aged. It also licenses and supervises homes for the aged and boarding homes and, where necessary, shares with the municipalities on a 90-10 basis the cost of maintaining needy residents. Under the Elderly Persons Housing Aid Act the province makes grants amounting to one-third of construction costs to municipalities and non-profit corporations, including religious and service organizations, engaged in building homes or low-rental housing units for elderly citizens.

Child Care and Protection.—Child welfare services, which include child protection and care, services for unmarried parents, and adoption services, are provided in all provinces under provincial legislation and are administered by some central authority, usually a division of child welfare within the department of welfare. Except in Quebec, where the province does not administer services directly, the program may be administered by the provincial authority itself or the responsibility may be delegated under provincial child welfare Acts to local children's aid societies, that is, to voluntary agencies with boards of directors, operating under charter and under the general supervision of provincial departments. In Quebec, child welfare services are administered by recognized voluntary

agencies and institutions, religious and secular. In Newfoundland, Prince Edward Island, Saskatchewan and to a large extent in Alberta, they are administered by the province; in the larger urban centres of Alberta there is some delegation of authority to the municipality. In Ontario and New Brunswick, a network of local children's aid societies, operating under statutory authority, is responsible for the services. In Nova Scotia, Manitoba and British Columbia, services are administered by local children's aid societies in the heavily populated areas and by the province in other areas.

Children's aid societies and the recognized agencies in Quebec receive substantial provincial grants and sometimes municipal grants and in many areas they also receive support from private subscriptions or from community chests or united funds. Maintenance costs for children in care of a voluntary or public agency may be borne entirely by the province—as in Alberta, Manitoba, Prince Edward Island and Newfoundland—or partly by the municipality of residence and partly by the province.

The child welfare agencies, whether provincial offices or authorized private agencies, have the authority to investigate cases of alleged neglect and, if necessary, to apprehend a child and to bring the case before a judge upon whom rests the responsibility of deciding whether in fact the child is neglected. When neglect is proved, the court may direct that the child be returned to his parent or parents, under supervision, or be made a ward of the province or a children's aid society or, in Quebec, be placed under the authority of a suitable person or agency. The appropriate agency is then responsible for making arrangements to meet the needs of the child in so far as community resources permit. The services may involve casework with families in their own homes, or care may be provided in foster boarding homes, in adoption homes or, for children who need this form of care, in selected institutions. Children placed for adoption may be wards or they may be placed on the written consent of the parent. Special efforts, which are meeting with considerable success, are being made to find suitable homes for children found difficult to place for adoption because of age, disability or ethnic differences. Adoptions, including those arranged privately, number about 10,000 annually.

Child welfare agencies make use of the small selective institution for placement of children who are forced to be away from their own homes for a short period or who may need preparation for placement in foster homes, and also for teen-age children who may find it easier to fit into a group setting than into a foster home. A growing number of institutions are meeting this demand for special care by a reduction in size or reorganization into small units and by the introduction of training courses for staff and other measures for the improvement of standards. The development of small, highly specialized institutions, which function as treatment centres for emotionally disturbed children, has been of particular significance in recent years.

Institutions for children are governed by provincial child welfare legislation or by special statutes dealing with welfare institutions, and by provincial or municipal public health regulations. The institutions are generally subject to inspection and in some provinces to licensing, and are usually required to make reports to the province on the movement of children under their care. Sources of income may include private subscription, provincial grants, and maintenance payments on behalf of children in care, payable by the parents, the placing agency, or the responsible municipal or provincial department.

Services to unmarried parents include casework services to the mother and possibly to the father, legal assistance in obtaining support for the child from the father, and foster-home care or adoption services for the child. If necessary, support for unmarried mothers may be obtained under general assistance programs. In many centres, homes for unmarried mothers are operated under private or religious auspices.

Except in Ontario, day nurseries for the children of working mothers have been established only in the larger centres; these are under voluntary auspices and in four provinces subject to licensing. In Ontario, where municipal day nurseries have been established in most of the industrial centres, a Day Nurseries Act sets out standards for operation and licensing to be met by all agencies offering day-care services. It also provides for reimbursement of one-half of the operating and maintenance costs of municipal day nurseries.

Subsection 3.—Workmen's Compensation

In all ten provinces, legislation is in force providing for compensation for injury to a workman by accident arising out of and in the course of employment or by a specified industrial disease. A summary of provincial workmen's compensation legislation is given in Chapter XVII.

PART III.—NATIONAL VOLUNTARY HEALTH AND WELFARE ACTIVITIES

A number of national voluntary agencies carry on important work in the provision of health and welfare services, planning and education. These agencies, some of which are described below, supplement the services of the federal and provincial authorities in many fields and play a leading role in stimulating public awareness of health and welfare needs and in promoting action to meet them.

The Canadian Welfare Council.—The Council, established in 1920, is a national voluntary association of organizations and individual citizens whose aim is to further the advancement of social welfare in Canada. Member organizations include community funds and councils, other private social agencies, various federal, provincial and municipal departments, and citizen groups and individuals active in the fields of health, welfare and recreation. It furnishes authoritative information, technical consultation and field service in the main areas of social welfare and provides a means of co-operative planning and action by public and private agencies.

The policies and programs of the Council are determined by its members under the leadership of a nationally representative board of governors. Aided by professional staff, the members work together through Divisions of Family and Child Welfare, Public Welfare, Corrections, and Community Funds and Councils, and through special committees on such subjects as welfare of immigrants and the aging. Departments of the Council include the Information and Research Branches and French Speaking Services. The Council publishes periodicals entitled *Canadian Welfare* and *Bien-Être Social Canadien*, a directory of Canadian welfare services, pamphlets, and division bulletins.

The Canadian Diabetic Association.—Formed in 1953 with headquarters in Toronto, the Association has approximately 20 branches in various parts of the country and a French-language affiliate, Association du Diabète, in Quebec. The aim of the organization is to promote public education regarding diabetes and to assist diabetic sufferers. Several provincial branches operate summer camps for diabetic children and the Ontario branch provides a diet-counselling service.

The Canadian Red Cross Society.—Established in 1896 in Canada, the Society is affiliated with the International Red Cross and has branches in all ten provinces with a national headquarters in Toronto. Its objectives, defined in its Charter, are "... in time of peace or war to carry on and assist in work for the improvement of health, the prevention of disease and the mitigation of suffering throughout the world". Red Cross Society activities are very broad, ranging from national and international disaster relief services to the support of local projects. One of the major activities in Canada is the operation of a national blood transfusion service, which includes collecting and supplying free of charge, for hospital use, blood provided by voluntary donors. The Society also maintains outpost hospitals, nursing stations and emergency units in several provinces. The Junior Red Cross promotes health education through its schoolroom branches across Canada; it supports a special fund to supply treatment to indigent handicapped children in Canada and a fund to promote understanding among school children of different countries.

The Canadian Foundation for Poliomyelitis and Rehabilitation.—The Canadian Foundation for Poliomyelitis was formed in 1948 to assist victims of poliomyelitis. Recently, however, because of the protection afforded by Salk vaccine, the Foundation has broadened its aims and changed its name to the Canadian Foundation for Poliomyelitis and Rehabilitation. Provincial chapters in all ten provinces conduct an annual March of Dimes campaign to raise funds for the support of various rehabilitation projects; these include financial support to treatment centres for the disabled and direct services such as assistance in meeting the costs of medical and related services for needy disabled persons; in some provinces direct services are confined to those for adults. The Foundation, particularly in 1959, has also given support to the operation of clinics for immunization against poliomyelitis.

Victorian Order of Nurses.*—Since its inception in 1897, the Victorian Order of Nurses has provided a professional home nursing and health counselling service. In all provinces except Prince Edward Island, the association's nurses carry out bedside nursing, prenatal, postnatal and newborn care. In some provinces they also assist provincial health authorities in tuberculosis and venereal disease programs and conduct child health clinics. In 1958 the Order employed 642 nurses to serve in 120 branches located in nine provinces. The national office is in Ottawa.

The Canadian National Institute for the Blind.—Since its inception in 1918 the Canadian National Institute for the Blind has been dedicated to the provision of rehabilitation and social welfare services to the blind and to those with partial sight. The national office, located in Toronto, serves all provinces through its seven regional divisions and 46 branches. The Institute provides both social services and financial assistance; it arranges for examinations and eye treatment services, purchases glasses for needy persons and, in co-operation with hospitals and medical centres, operates an eye-bank. Under an extensive rehabilitation program with training facilities centred in Toronto, it trains blind persons in various occupations, offers job counselling and placement services and, for those who cannot compete in industry, it provides sheltered workshops; more than 425 newspaper, tobacco and confectionery concession stands are operated by blind persons. Sightless field workers bring a home-training program to blind persons to help them learn Braille, typing and handicrafts, and a special program for pre-school blind children prepares them for attendance at a school for the blind. The Institute builds and maintains residential quarters and recreational facilities in all larger centres and supplies Braille books and recordings to the blind from its national library in Toronto.

The Health League of Canada.—The Health League of Canada, first established in 1918 as a National Committee for Combating Venereal Disease, now embraces about 60 national member associations supporting a wide variety of health activities. The primary objectives of the League are the promotion of personal and community health and the prevention of disease through health education. Its major activities are administered from a national office in Toronto, usually working through the affiliated organizations. Educational efforts include the provision of speakers for meetings and the preparation of radio scripts, health education films and literature; a magazine is published bi-monthly and weekly news bulletins are released to the press. The League also sponsors a National Health Week and a National Immunization Week.

St. John Ambulance Association.—The Order of the Hospital of St. John of Jerusalem began as a local unit in Montreal in 1884. The organization is composed of two parts—the St. John Ambulance Association and the St. John Ambulance Brigade. The first is devoted to teaching first aid and home nursing and the latter to directing the emergency corps of trained personnel. Headquarters of the Association is in Ottawa, with provincial divisions in all provinces controlling their own programs and financing the operation of their local branches.

* Details of the home nursing services of the Order are given in the 1957-58 Year Book, pp. 269-270.

The Canadian Tuberculosis Association.—Founded in 1900 to stimulate public demand for increased treatment facilities, the Association has extended its objectives to case-finding, diagnostic services, rehabilitation of ex-patients and public education. Close co-operation exists with departments of health in the areas of case-finding and rehabilitation. Provincial organizations, which exist in all provinces, are largely autonomous, with the national office in Ottawa acting as a co-ordinating agency for the distribution of publicity material and as an advisory body to government agencies as well as to the provincial and local branches. The Association and its provincial bodies are supported by the sale of Christmas seals, with federal and provincial governments providing grants for specific projects.

The National Cancer Institute of Canada.—The National Cancer Institute, composed of persons representing professional societies and agencies concerned with cancer research and therapy, was founded in 1947 to develop a nationally co-ordinated research and professional education program. The Institute promotes fundamental research through selected projects in universities, hospitals and research centres, maintains a Canadian Tumour Registry, provides training fellowships and, in co-operation with the Canadian Medical Association and medical schools, promotes professional education on cancer topics. The Institute receives support from federal and provincial grants and from the Canadian Cancer Society; a special project on lung cancer has been supported by the Canadian Tobacco Industry.

The Canadian Hearing Society.—Organized in Toronto in 1940 as the National Society of the Deaf and the Hard of Hearing, the Society operates chiefly in Toronto and the surrounding area. It is concerned with the preservation of hearing, the treatment of deafness and the provision of rehabilitation services for those with impaired hearing. It provides otological examinations, counselling, vocational guidance and job placement services for the deaf or hard-of-hearing, and hearing aids to indigent persons.

The Canadian Mental Health Association.—The Association, organized in 1918 as the National Committee for Mental Hygiene, now has divisions in nine provinces. Since its inception the organization has participated directly or indirectly in almost every development in the mental health field in Canada. The Association conducts an active public education program, serves as consultant to government departments, welfare agencies and voluntary organizations, operates a teacher-training program and encourages research. Volunteer workers provide a variety of services related to the welfare of discharged and hospitalized mental patients. The national office at Toronto is supported by voluntary donations and federal and provincial grants.

The Canadian Cancer Society.—Organized in 1938 to co-ordinate voluntary activities and disseminate knowledge in the cancer field, the Canadian Cancer Society operates in all provinces and has its national office in Toronto. Its services include a public education program, welfare services such as transportation, home nursing and cancer dressings to needy persons, and fellowships to medical graduates for advanced study in cancer. Voluntary subscriptions to the Society provide the major source of funds for the basic research program of the National Cancer Institute of Canada. The Society also supports clinical research.

National Heart Foundation of Canada.—The Canadian Heart Foundation, formed in 1947 by physicians to co-ordinate research and disseminate information, was replaced by the National Heart Foundation of Canada in 1956. Its membership consists of lay and medical organizations interested in promoting or assisting research on cardiovascular diseases. Support for research projects comes from national and provincial grants and from private donations. The Foundation's national office is in Toronto; provincial branches have been established in eight provinces.

The Canadian Paraplegic Association.—The Canadian Paraplegic Association, which was established in 1945 to complement the specialized treatment and rehabilitation services developed for veterans by the Department of Veterans Affairs, now includes services for civilian paraplegic cases and persons seriously handicapped by poliomyelitis and other disabling conditions. The national office of the Association and the major treatment centre, Lyndhurst Lodge, are housed in the same building in Toronto. Services include in-patient and out-patient therapy, the provision of prosthetic appliances, loans to patients, and rehabilitation services such as job counselling. Four regional divisions also have been established. The British Columbia Division is affiliated with the G. F. Strong Rehabilitation Centre in Vancouver.

The Canadian Council for Crippled Children and Adults.—The Council was established in 1937 to co-ordinate and support activities for the care and rehabilitation of physically impaired children. The first provincial organization was formed in Ontario in 1922 and similar organizations, which have remained autonomous, now exist in all provinces. In 1954 the services of the organization were extended to include adults. Programs in the provinces vary, ranging from the establishment of cerebral palsy clinics and the operation of summer camps for the handicapped, to payment for treatment services, prosthetics, and hospital and nursing care for needy handicapped persons. In most provinces, service clubs raise funds to support the work of the organization, particularly through the sale of Easter Seals.

The Canadian Arthritis and Rheumatism Society.—Established in 1948 to promote research, professional education and treatment services in the field of rheumatism and arthritis and to disseminate factual information, the Society has branches operating in all provinces except Prince Edward Island and Newfoundland; its national office is in Toronto. Medical advisory boards in each of the eight provinces and one at the national level give advice and guidance to the provincial and national directors. The Society sponsors an education program both for the general public and for physicians and maintains out-patient clinics in general hospitals for the treatment of low-income patients. Its branches pioneered in the operation of mobile clinics and now operate some 70 units to bring treatment to home-bound patients and in three provinces support a mobile consultative service. All divisions have liaison with employment agencies and vocational training schemes. Services are usually free or for a nominal amount. The national body promotes research projects in various universities and institutions and provides clinical fellowships to physicians in all parts of Canada.

Multiple Sclerosis Society of Canada.—Organized in 1948 to encourage, support and co-ordinate research regarding multiple sclerosis, the Society also compiles statistics and carries on public education. The national office in Ottawa is maintained by 19 provincial and local chapters whose chief function is fund raising from which research projects are financed. Local chapters also help indigent persons to obtain wheel chairs, orthopaedic supports and other necessary equipment.

The Canadian Association for Retarded Children.—The Association was incorporated in 1958 to assist and give co-ordinated direction to the work of a growing number of organizations for the mentally retarded, now represented by 10 provincial and some 130 local groups. Membership of the locals exceeds 12,000, most of whom are parents of mentally retarded children. The Association promotes the establishment of clinics, day schools, institutions and workshops; it also supports and encourages research into the causes of mental deficiency. Increasing numbers of day classes offer training opportunities within the community for mentally retarded children who are not acceptable for regular school instruction. Financial support comes from local fund-raising campaigns, community chests, and, in varying degrees, from provincial departments of education.

The Muscular Dystrophy Association of Canada.—This Association was organized in 1954 to stimulate and unify efforts in research into the cause, nature and cure of muscular dystrophy and to promote the establishment of facilities for diagnostic, consul-

tative and treatment services. It has a national office in Toronto supported by nine regional chapters and its chief activity is the support of research projects in medical centres across the country. Assistance is given to individuals suffering from muscular dystrophy through the purchase of necessary equipment and the provision of transportation to clinics.

PART IV.—VETERANS SERVICES*

The Department of Veterans Affairs administers most of the legislation making up the Veterans Charter and provides administration facilities for the Canadian Pension Commission which administers the Pension Act and the Civilian War Pensions and Allowances Act; for the War Veterans Allowance Board which is responsible for the administration of the War Veterans Allowance Act; and for the Secretary-General (Canada) of the Commonwealth War Graves Commission.

The main benefits now provided to veterans consist of medical treatment for those eligible to receive it, land settlement and home construction assistance, educational assistance for children of the war dead, veterans insurance, general welfare services, unused re-establishment credit, disability and widows' pensions, and war veterans allowances.

The work of the Department, excepting the administration of the Veterans' Land Act, is carried out through 17 district offices and five sub-district offices in Canada and one district office in England. There are eight Veterans' Land Act district offices and 13 regional offices established to administer the benefits of that Act.

Section 1.—Medical, Dental and Prosthetic Services

Medical Services.—The Department of Veterans Affairs, through its Treatment Services Branch, provides medical services for eligible veterans across Canada. Service is also provided for members of the Armed Forces, the Royal Canadian Mounted Police, and the wards of other governments or departments at the request and expense of the authorities concerned.

The primary responsibility of the Branch is to provide examination and treatment to disability pensioners for their pensionable disabilities. These veterans constitute about one-quarter of the in-patient load. The pensioner receives treatment regardless of his place of residence, but service to other veterans is available in Canada only.

Other main groups of veterans receiving treatment are War Veterans Allowance recipients, veterans whose service and need make them eligible for domiciliary care, and veterans whose service and financial circumstances render them eligible for free treatment, or at a cost adjusted to their ability to pay. If beds are available, any veteran may receive treatment in a departmental hospital on a guarantee of payment of the cost of treatment.

Treatment is provided across Canada in 11 active treatment hospitals, two convalescent centres, and two homes maintained for the provision of domiciliary care. The rated capacity of these institutions at Mar. 31, 1960 was 8,970 beds. An additional 584 beds were available in veterans pavilions situated at Ottawa, Regina and Edmonton. Pavilions are owned by the Department but are operated by the parent hospital, and medical staff is provided by the Department. Where departmental facilities are not available, the eligible veteran may receive treatment at the expense of the Department in the hospital of his choice by his own doctor. Professional staffs of active treatment hospitals are employed on a part-time basis; in the main they are recommended for appointment by the Deans of Medicine of the universities with which the hospitals are affiliated. The majority are members of medical faculties, engaged in teaching and private practice.

The Department maintains research and medical teaching programs in its institutions which are considered essential to attract highly qualified professional men and thus ensure the veteran of the highest quality of medical care. All active treatment hospitals have been approved by the Royal College of Physicians and Surgeons of Canada for postgraduate

* Prepared by the Department of Veterans Affairs, Ottawa.

teaching in medicine and surgery, and the majority are approved also for advanced post-graduate training in the various specialties. An intern-resident program is in effect; at the end of March 1960, 272 residents and interns were in training, together with 194 interns in occupational therapy, physiotherapy, psychology, laboratory, and medical social services.

During the fiscal year 1959-60 about 90 projects were in progress in the Clinical Research Program. The program is varied but in the main deals with conditions affecting aging, which the Department is in a unique position to investigate. Self-contained Clinical Investigation Units have been set up in active treatment hospitals located at Montreal, Toronto, London, Winnipeg and Vancouver.

During the year ended Mar. 31, 1960, 26 departmental employees attended courses assisted fully or partly by the research and education vote. At the end of the year, one school for nursing assistants remained in operation. This school, at Camp Hill Hospital in Halifax, has an annual capacity of 70 graduates who are offered employment in departmental hospitals across Canada.

Departmental hospitals provide base hospital facilities for the treatment of members of the Armed Forces. The Ste. Foy Hospital near Quebec City and Sunnybrook Hospital at Toronto have self-contained units but in other institutions there is a close integration of patients. The units are staffed by Armed Service personnel and utilize the ancillary services of the hospital. They also provide training facilities for members of the medical services of the Armed Forces.

Progress continues to be made toward the provision of a nation-wide chain of modern fire-resistant institutions through replacement of obsolete accommodation. Patient-load for the year ended Mar. 31, 1960, was as follows:—

<i>Item</i>	<i>No.</i>
Patients in departmental hospitals at Mar. 31.....	7,705
Patients in other hospitals at Mar. 31.....	2,312
Out-patients on strength at Mar. 31.....	427
TOTAL PATIENTS AT MAR. 31.....	10,444
Admissions to departmental hospitals during year.....	52,375
Admissions to other hospitals during year.....	20,614
Admissions to out-patient strength during year.....	1,924
TOTAL ADMISSIONS DURING YEAR.....	74,913
Patient-days in departmental hospitals.....	2,694,271
Patient-days in other hospitals.....	889,642 ¹
TOTAL PATIENT-DAYS.....	3,583,913

¹ Does not include any stay attributed to patients on out-patient strength.

Under the federal-provincial hospital insurance program, DVA hospitals in the participating provinces are recognized for the provision of insured services to veterans. Arrangements have been made for the payment of any necessary premiums on behalf of veterans who are in receipt of War Veterans Allowances. The Veterans Treatment Regulations remain the authority for the treatment of veterans (and others) in DVA institutions and elsewhere under departmental responsibility, regardless of whether or not the hospitalization is at the expense of the insurance plan.

Dental Services.—Dental treatment is provided for those pensioned veterans whose disability would be alleviated by such treatment, for War Veterans Allowance recipients, and for other persons whose health care is the responsibility of the Department, such as Royal Canadian Mounted Police personnel and members of the Canadian Forces. Treatment is also provided at the request of other governments.

The Department employs 37 full-time dentists, one half-time dentist and two dental consultants, specialists in their fields, on a part-time basis. Twenty-two dental clinics are maintained in departmental hospitals or centres on a full-time or part-time basis. Elsewhere, the services of private dentists on a fee-for-service basis are utilized. Training courses for dental surgeons in various specialties of dentistry have been conducted by the Department and many departmental dentists have participated in the research programs of their respective hospitals, and assisted the dental colleges by part-time lecturing.

All clinics and dental surgeons were working well up to capacity during 1959-60; 19,591 courses of treatment were given, an increase of 443 patients over 1958-59. Operations numbered 122,650, also an increase over the previous year.

Prosthetic Services.—The Department provides a complete coverage of prosthetic and orthopaedic appliances and sensory aid devices to disabled veterans and to other departments of government on a repayment basis. The primary issue is made on medical prescription. Maintenance and renewal are carried out at district centres. Service is given without expense to the eligible veteran. Twelve centres or shops are located in or adjacent to the departmental hospitals in major cities from coast to coast, and six sub-centres in smaller localities. The largest centre, located at Sunnybrook Hospital, Toronto, manufactures stock parts and is the central stores supply.

A research section is maintained for the design and testing of new materials and appliances. Among new developments now in general production are the plastic Syme's leg with a solid ankle and sponge rubber foot, the Canadian Hip Disarticulation leg, and a motorized unit designed by the National Research Council for wheel chairs for quadruplegic cases. A newly developed plastic mechanical hand, cosmetic gloves for artificial hands, and a light universal ankle brace to replace heavier types have recently been put into general production.

During the year ended Mar. 31, 1960, service was provided to approximately 77,000 patients who received 150,000 issues.

Section 2.—Rehabilitation Services

Much of the legislation designed to assist with the postwar rehabilitation of veterans has expired but, as indicated in this Section, some programs are still of significant importance. Besides administering the programs described in this Section, the Welfare Services Branch is responsible for all field work connected with War Veterans Allowances (see p. 342). It also provides a counselling and referral service to veterans and their dependants in relation to a wide variety of needs not covered by departmental legislation. This work requires close liaison with Service benevolent funds, veterans organizations, other government departments at the federal, provincial and municipal levels and a broad range of voluntary health and welfare organizations.

War Service Gratuity.—The payment of war service gratuities was discontinued after Dec. 31, 1954 for World War II veterans, except for those with overseas service who could not apply before that date as a result of unusual circumstances. The yearly amounts paid in gratuities up to the end of March 1955 are shown in the 1956 Year Book, p. 306. Those paid subsequently and the cumulative totals to Mar. 31, 1960 were:—

<i>Fiscal Year</i>	<i>World War II Veterans</i>	<i>Special Force Veterans</i>
	\$	\$
1955-56.....	30,536	16,932
1956-57.....	9,457	7,351
1957-58.....	10,016	1,230
1958-59.....	9,974	2,089
1959-60.....	6,220	1,463
CUMULATIVE TOTALS TO MAR. 31, 1960.....	470,038,242	6,693,604

Re-establishment Credit.—On Mar. 31, 1960, an amount of \$16,000,000 in re-establishment credit, out of nearly \$325,000,000, had not yet been authorized on behalf of veterans entitled to it. World War II veterans have until Sept. 30, 1962, and veterans who served with the Special Force have 15 years from the date of their discharge from the Special Force, to apply for their unused credit. The amounts paid during 1958-59 and 1959-60 with cumulative totals to Mar. 31, 1960, by required purpose, are shown in Table 1.

1.—Re-establishment Credits Paid, by Required Purpose, Years Ended Mar. 31, 1959 and 1960, with Cumulative Totals

Purpose	1959	1960	Cumulative Total to Mar. 31, 1960
	\$	\$	\$
Homes	1,302,821	1,415,767	241,764,518
Purchased under National Housing Act.....	7,814	5,977	3,347,265
Purchased other than under National Housing Act.....	59,897	59,695	32,520,987
Repairs, etc.....	132,571	156,909	16,949,799
Furniture and equipment.....	1,072,988	1,167,693	184,406,191
Reduction of mortgage.....	29,551	25,493	4,540,276
Business	266,216	265,810	55,777,468
Purchase of a business.....	407	1,510	3,678,715
Working capital.....	44,314	28,117	25,308,969
Tools and equipment.....	221,495	236,183	26,789,784
Miscellaneous	392,924	958,081	11,419,712
Insurance, annuities, etc.....	305,644	422,472	9,661,817
Special equipment for training.....	10,110	8,919	748,361
Clothing.....	44,464	186,090	407,082
Reimbursements.....	32,706	340,600	602,452
Totals	1,961,961	2,639,658	308,961,698

Casualty Rehabilitation.—The function of the Casualty Welfare Division is outlined in the 1956 Year Book, p. 307. At Mar. 31, 1960, there were 3,458 active cases. The total number of disabled veterans then registered with the Division was 47,850 and of these 44,392 were closed cases. Registrations during the year ended Mar. 31, 1960 numbered 1,144 and cases closed numbered 2,951.

2.—Registrations for Casualty Rehabilitation, by Status of Applicant and Type of Disability, up to Mar. 31, 1960

Status	Registrants up to—		Type of Disability	Active Cases as at Mar. 31, 1959	Total Closed Cases	Active Cases as at Mar. 31, 1960	Total Closed Cases
	Mar. 31, 1959	Mar. 31, 1960					
	No.	No.		No.	No.	No.	No.
Employed.....	36,670	37,624	Amputation.....	148	2,256	128	2,295
Unemployed.....	986	958	Neuro-muscular and skeletal system.....	1,194	13,151	1,053	13,684
Receiving treatment, training or other services.....	1,813	1,312	Total and partial loss of hearing or sight.....	241	3,137	211	3,223
Rehabilitation not feasible...	4,049	4,414	Neurological cases.....	201	1,575	139	1,664
Closed on WVA.....	2,012	2,282	Heart and vascular system..	247	4,194	215	4,340
Left Canada.....	1,218	1,260	Respiratory.....	1,190	11,305	984	11,719
			Mental and emotional.....	328	1,367	246	1,564
			Unclassified.....	582	5,632	482	5,903
Totals	46,748	47,850	Totals	4,131	42,617	3,458	44,392

Social Services.—The Social Services Division provides a casework service to veterans and their dependants, and a social welfare consultant service to other departmental officials dealing with welfare matters. It maintains liaison, in the interest of veterans and their dependants, with welfare departments at all levels of government and with private social and philanthropic agencies.

The Division has certain responsibilities in connection with the operation of the Assistance Fund available to war veterans allowance recipients who are in need (see below). At the request of the Department of National Defence it furnishes reports on home circumstances of Armed Forces personnel who request compassionate leave, posting or discharge. The latter service is often instrumental in providing help to those concerned through counselling and referral to community welfare services.

During the year ended Mar. 31, 1959, there were 15,291 requests for services from all sources, about the same as in the previous year; in the year ended Mar. 31, 1960 requests numbered 14,109, an 8-p.c. decrease from 1959.

Older Veterans.—Services on behalf of older veterans and their dependants involve assistance with individual employment and financial problems including those caused by age discrimination by employers, unemployment as a result of economic conditions and technological changes, health problems limiting work abilities and narrowing the range of feasible occupations, or retirement with inadequate pension income.

The World War I veteran population in Canada at Mar. 31, 1960 was approximately 250,000, all of whom were over 60 years of age, the average being 68 years. In addition, at least 12,000 World War II veterans were in this age group, a number that will increase at an accelerating rate. It is important that these older veterans, where necessary, be assisted to remain in or to return to self-supporting circumstances but, when this is not possible, that they and their dependants be assured security from other sources. To this end, the Veterans Welfare Services Branch works in close co-operation with other Federal Government departments concerned as well as with provincial and municipal agencies and private organizations. The general willingness of veterans in the older age group to engage in available employment rather than claim other benefits is shown by the fact that at Mar. 31, 1960, 9,410 World War I veterans were registered with the Employment Service of the Unemployment Insurance Commission, 404 fewer than at the same date of 1959. The decrease also indicates a somewhat more realistic attitude of employers toward the hiring of older workers who have the required qualifications. A continuing education program for the older veteran is conducted by the Branch through the Interdepartmental Committee on Older Workers sponsored by the Department of Labour. The Corps of Commissionaires in the fiscal year 1959-60 provided full-time uniformed employment for more than 5,000 selected older veterans, half of whom were working under Federal Government departmental contracts.

Assistance Fund.—Supplementary financial assistance is provided by the Assistance Fund to recipients under the War Veterans Allowance Act (see p. 342) who are in need. Assistance may be given as a continuing monthly grant in accordance with a formula which includes costs of shelter, fuel, food, clothing, personal care and certain health needs, or in single grants to meet needs not covered by the formula. The maximum assistance available from the Fund is \$240 and \$300 per annum, respectively, to single and married recipients of WVA.

Field work for the Fund is done almost entirely by the Welfare Services Branch which, through counselling and referral, also assists applicants in other ways. Since a monthly Assistance Fund Grant may be continued without interruption until there is a change in

the recipient's financial circumstances, the number of people assisted in any fiscal year is greater than the number applying during that period. Fund activity during the years ended Mar. 31, 1959 and 1960 was as follows:—

Item	Years Ended—	
	Mar. 31, 1959	Mar. 31, 1960
Persons assisted.....	No. 14,055	16,705
Persons applying during year.....	" 6,153	6,389
Applicants assisted.....	" 5,539	5,642
Proportion of applicants assisted.....	p.c. 90	88
Fund expenditures during year.....	\$ 2,095,521	2,599,688
Proportion of expenditures given in monthly grants.....	p.c. 88	91
Persons in receipt of continuing monthly grants.....	No. 11,063	13,346

Education and Training.—Eligibility for training under the Veterans Rehabilitation Act and the Veterans Benefit Act, 1954 has lapsed except for disability pensioners and for a few special cases delayed by personal illness. Effective July 27, 1959, Pensioners Training Regulations were consolidated and now provide essential training for pensioned veterans without affecting, or being affected by, other benefits that may have been received. They also provide for training of pensioned ex-members of the regular and reserve forces.

Training activities at Mar. 31, 1959 and Mar. 31, 1960, respectively, were as follows:—

Type of Training	Mar. 31, 1959	Mar. 31, 1960
	No.	No.
University Training—		
World War II veterans.....	46	46
Special Force.....	29	24
Vocational Training—		
World War II veterans.....	18	16
Special Force.....	10	3
Pensioner Training—		
University.....	12	16
Vocational.....	32	33
TOTALS.....	147	138

The Children of War Dead (Education Assistance) Act provides help with post-secondary school training for children of deceased ex-servicemen whose deaths have been ruled by the Canadian Pension Commission to have been attributable to or incurred during war service, or attributable to regular force service. Eligible students who attend approved training institutions receive an allowance of \$25 a month if under age 21, and \$60 a month if over that age but not over 25 years of age. Prescribed fees not exceeding \$500 for any one academic year may be paid on behalf of each student. Up to Mar. 31, 1959, 1,406 applications were approved under this Act. At Mar. 31, 1960, the number had risen to 1,736.

Awaiting Returns Allowance.—This allowance is a sustenance grant designed to assist in the maintenance of the veteran and his family during the early stages of a venture when the income therefrom is negligible or insufficient for that purpose. Because of the time limit imposed under the Veterans Rehabilitation Act, only veterans who settle under the Veterans' Land Act and who apply for the allowance within one year of date of establishment thereunder are now eligible. The maximum entitlement to the benefit is 52 weeks, available within two years of the date of initial award. The allowance is payable for periods when the net income plus the allowance does not exceed the maximum rate of \$50 per month for a single veteran and \$70 per month for a married veteran plus additional allowance for up to six children and/or \$15 per month for each dependent parent.

Up to Mar. 31, 1960, 63,039 veterans, including 65 ex-members of the Special Force, were approved for the allowance, 90 p.c. of whom were discontinued as established. The total amount expended on this benefit from inception to Mar. 31, 1960 was \$27,324,131. At that date there were 94 active cases.

Vetcraft.—A short history of Vetcraft is shown in the 1959 Year Book, p. 293. Shops are now operated at Toronto and Montreal providing full-time employment for a number of veterans and widows and, in addition, small assembly work is done in Winnipeg, Regina and Calgary, providing part-time employment for other workers. Production for the year 1959, which was sold entirely to the Dominion Command of the Canadian Legion, amounted to 6,402,000 poppies and 63,879 memorial wreaths and crosses.

Section 3.—Veterans Life Insurance

Returned Soldiers' Insurance.—The Returned Soldiers' Insurance Act (SC 1920, c. 54 as amended) provided eligibility to contract for life insurance at rates comparable to those available commercially but the medical standard required of applicants was much lower than otherwise acceptable. Applications were accepted from 1920 to 1923 and from 1928 to 1933. No policies have been issued since Aug. 31, 1933.

On Mar. 31, 1960, of the total of 48,319 policies issued there remained 9,593 policies in force for a face amount of \$20,320,841. Of this number 2,429 were premium-paying, 6,434 were paid up, 113 had been converted to extended term insurance and 617 were being covered in the disability provisions of the policy contracts. Terminations from 1920 to Mar. 31, 1960 totalled 38,726. Of this number 12,835 were terminated by death, 16,960 by surrender for cash value and 8,931 by lapse, expiry or other mode of termination.

Veterans Insurance.—The Veterans Insurance Act (SC 1952, c. 279 as amended) provides eligibility to contract for life insurance to veterans of World War II and those who served in the action in Korea and certain other groups. The period of eligibility to apply for this insurance, up to a maximum of \$10,000, extends to Sept. 30, 1962.

Of the 48,661 applications received to Mar. 31, 1960, only 81 had been declined for medical reasons. Of the 46,882 policies issued, 30,336 for a face amount of \$94,521,762 remained in force on that date, 11,424 policies had been surrendered for their cash value and 2,650 policies were terminated by lapse and extended term insurance expiry. There were 2,403 policies terminated by death.

3.—Death Claims Intimated, Years Ended Mar. 31, 1946-60, with Cumulative Totals 1921-45

Year Ended Mar. 31—	Returned Soldiers' Insurance		Veterans Insurance	
	No.	\$	No.	\$
1921-45.....	6,874	15,086,330	—	—
1946.....	331	636,100	3	11,500
1947.....	282	533,969	26	72,500
1948.....	304	597,985	54	169,500
1949.....	337	655,898	91	233,000
1950.....	402	679,621	108	318,580
1951.....	379	720,810	122	370,000
1952.....	418	817,559	178	461,500
1953.....	412	813,446	189	544,500
1954.....	421	821,930	187	495,500
1955.....	428	799,440	177	512,740
1956.....	434	813,743	216	500,868
1957.....	447	842,608	225	639,048
1958.....	486	902,324	254	687,145
1959.....	436	835,327	283	806,546
1960.....	444	861,769	290	810,742

Section 4.—Land Settlement and Home Construction

Veterans' Land Act.—This Act, which consists of three distinct Parts, provides for the settlement of veterans of World War II and the Special Force under five broad categories: farming as a full-time occupation; part-time farming in rural or semi-rural areas to supplement income from other employment; commercial fishing; land settlement, generally

in pioneer areas, under agreements between the Federal Government and the provinces; and home building on city-size lots by veterans who have been approved for a loan under the National Housing Act and who act as their own contractors.

Major amendments were made to the Act in 1959, principally relating to the amount of financial assistance available. Under Parts I and III, maximum loans to full-time farmers for the acquisition or development of economic farm units were increased from \$9,000 to \$20,000; and to part-time farmers and commercial fishermen from \$7,400 to \$9,000. The financial assistance available to veterans building their own homes on city-size lots under the provisions of Part II was increased from \$8,000 to \$10,000.

In addition to increasing the maximum of farm loans, the amendments broadened the purposes for which such loans may be made to include the purchase of basic herd livestock and necessary farm equipment, and the repayment of debts reasonably incurred by full-time farming veterans in the development of economic family-farm units. The repayment period of farm loans under Part III for full-time farmers was also extended from 25 to 30 years.

Of the maximum financial assistance available to full-time farmers, part-time farmers and commercial fishermen, \$6,000 is provided under Part I of the Act. A conditional grant or subsidy of up to \$2,320 may be earned by compliance with the terms of the contract for the first 10 years. The maximum repayment period for Part I loans is 25 years with interest at 3½ p.c. Loans made under Part III, with interest at 5 p.c., are repayable over a period of 30 years in the case of full-time farmers and over 25 years in the case of part-time farmers and commercial fishermen.

Veterans being settled on federal or provincial lands and Indian veterans being settled on Indian reserves may obtain financial assistance up to \$2,320 which is non-repayable provided settlement terms and conditions are met for a period of 10 years.

Under Part II, a qualified veteran who has been approved for a loan under the National Housing Act may receive financial and other assistance to build his own home on any lot suitable for a single-family dwelling. The maximum financial assistance available is \$10,000 which, upon completion of the home, is repayable under a mortgage contract with Central Mortgage and Housing Corporation or an approved lender under the National Housing Act at the rate of interest chargeable under that Act.

The Veterans' Land Act Branch continues to be organized into eight districts comprising 32 regional offices. However, as a result of arrangements made with the Farm Credit Corporation for the utilization of the trained VLA staff to handle work under the Farm Credit Act, a major reorganization of field areas is in progress. When completed, the unified field staff of both administrations will comprise 200 Farm Credit Advisors resident within their respective field areas who will be responsible for providing pre-loan counselling related to farm organization, farm planning, credit requirements, etc., to prospective borrowers under the Veterans' Land Act or the Farm Credit Act; carrying out appraisals of farm properties; and providing post-loan counselling for as long as may be necessary in each case.

The field organization of the Veterans' Land Act Branch will also consist of 60 Settlement Officers and 84 Construction Supervisors strategically located across the country whose main duties will relate to the establishment and supervision of part-time farmers and veterans building their own homes.

At the end of March 1960, 83,884 veterans had received financial assistance under the various types of settlement provided in the Veterans' Land Act and a total of \$455,297,926 had been expended. Active accounts numbered 54,682, including 631 Indian veterans settled on Indian reserves whose accounts are administered by the Department of Citizenship and Immigration. During 1959-60, approvals for assistance were made on behalf of 2,910 veterans of World War II and the Special Force, including 350 for full-time farming, 1,837 for part-time farming, 40 for commercial fishing, 21 for settlement on Indian reserves, and 662 for home building on city-size lots under Part II. There

were also 941 additional loans made to established full-time farmers under the provisions of Part III. All of these approvals involved the expenditure of more than \$24,700,000 in public funds during the year.

To Mar. 31, 1960, a total of 26,453 houses had been completed and a further 1,337 were under construction. There were 1,533 houses completed in 1959-60, a further 1,436 new houses were started and 1,096 veterans received approval to effect additions or improvements to their houses and other buildings.

During 1959-60 a total of 4,679 appraisals were carried out, including 1,055 relating to applications for additional loans under Part III from full-time farming veterans already settled. Also included were 720 appraisals made for other government departments or agencies, many of them involving properties of substantial value. Since inception of operations under the Act, VLA field staff have made more than 110,000 appraisals.

The repayment record of the settled veterans continues to be very satisfactory, as evidenced by the fact that, on Mar. 31, 1960, less than 2 p.c. of the active accounts, on an annual or semi-annual payment basis, had arrears in excess of \$200, or \$100 if paying monthly. The total amount returned to the Treasury from current active accounts represents 105.9 p.c. of the total amount due and owing in such accounts. Of the \$419,000,000 expended on behalf of 74,040 veterans established with repayable contracts in 16½ years of settlement operations to Mar. 31, 1960, approximately 55 p.c. had been repaid. Included in this percentage was the amount of \$51,592,000 constituting conditional grants earned by 32,110 veterans who have fulfilled the terms of settlement for the first ten years of their contracts.

One of the factors contributing to the very favourable repayment record of the VLA settlers is the fact that 23,672 adopted one of the various pre-arranged repayment plans made available to them. There are 16,391 using the post-dated cheque plan, 6,354 have given orders on pensions or have made salary assignments and, at the end of March 1960, there were 927 share-of-crop agreements in effect in the spring wheat areas of the Prairie Provinces. In addition, 1,931 veterans have completely repaid their contract debts and have only to fulfil the residence or personal operation requirements of their agreements for the remainder of their 10-year conditional grant periods in order to acquire title.

4.—Summary of Settlement and Expenditures under the Veterans' Land Act, as at Mar. 31, 1960

NOTE.—This table does not include details relative to sales of reverted or surplus property to civilian purchasers.

Item	Full-Time Farming	Small Holdings	Commercial Fishing	Provincial Lands	Federal Lands	Indian Reserves	City-Size Lots	Total
Approved for financial assistance..... No.	28,877	44,011	1,152	4,866	484	1,598	2,896	83,884
Amount of public funds expended..... \$	163,251,334	249,801,130	4,922,346	10,612,318	1,027,481	3,546,800	22,136,517	455,297,926
Approximate average expenditure per approval..... \$	5,653	5,676	4,273	2,180	2,123	2,220	7,644	5,428
Total conditional grants earned..... No.	16,372	11,951	529	3,143	115	967	—	33,077
Average amount of grant earned..... \$	2,030	1,459	1,751	2,290	2,296	2,287	—	1,852
Grants earned, title released..... No.	5,706	5,014	186	3,143	115	967	—	15,131

5.—Summary of House Construction under the Veterans' Land Act, as at Mar. 31, 1960

Item	Full-Time Farming	Small Holdings	Com- mercial Fishing	Provincial Lands	Federal Lands	City-Size Lots	Total
	No.	No.	No.	No.	No.	No.	No.
Houses completed (from 1942).....	1,824	20,612	287	1,394	119	2,217	26,453
Houses under construction.....	54	626	6	21	5	625	1,337
Contracts let (work not yet started)...	136	587	5	103	1	4	836
Net Approvals for New Housing.	2,014	21,825	298	1,518	125	2,846	28,626

Section 5.—Pensions Advocates

Veterans Bureau.—The Veterans Bureau, which has completed its twenty-eighth year of operation, is a branch of the Department of Veterans Affairs and has an office under the direction of a District Pensions Advocate in all districts in Canada in which offices of the Department are situated and at the District Office in London, England.

The duties of Pensions Advocates, most of whom are lawyers, are to assist former members of the Armed Forces and their dependants and former members of the various auxiliary organizations, such as merchant seamen, firefighters and others, in preparing and submitting claims to the Canadian Pension Commission. They also appear as counsel for applicants before the Appeal Boards of the Commission. No charge is made for the services of the Bureau.

During the year ended Mar. 31, 1960, 6,520 claims were submitted to the Pension Commission. This figure represents a slight increase over the 6,100 claims submitted during the previous fiscal year.

Section 6.—Veterans Pensions

Previous issues of the Year Book contain information on the development of Canadian pension legislation, together with yearly statistics of numbers and liabilities. The Pension Act has not been amended since 1957. The major amendments at that time which resulted in increased benefits are summarized in the 1959 Year Book, p. 297.

The annual rates for a 100-p.c. disability for all ranks up to and including that of Lieutenant-Colonel and equivalent ranks are:—

	\$
Pensioner.....	1,800
Wife.....	600
First child.....	240
Second child.....	180
Each subsequent child.....	144

For assessments lower than 100 p.c., the awards are proportionately less. The rate of personal pension is slightly higher if the pensioner held the rank of Colonel or higher rank but the additional pension for wives and children remains the same for all ranks.

Attendance allowance, which is payable to a pensioner who is totally disabled and in need of attendance, and which varies from a minimum of \$480 to a maximum of \$1,800 depending on the amount of attendance required, is paid in addition to pension. While a pensioner must be totally disabled to receive this allowance, the disability resulting in the need of attendance may be non-pensionable.

The annual rates of pension for widows and children of all ranks up to and including that of Lieutenant-Colonel and equivalent ranks are:—

	\$
Widow.....	1,380
First child.....	480
Second child.....	360
Each subsequent child.....	288

Rates for widows are slightly higher if the deceased veteran held the rank of Colonel or higher rank but those for children remain the same for all ranks.

The Civilian War Pensions and Allowance Act provides for the payment of pensions to, or on behalf of, persons who served in certain civilian groups that were closely associated with the World War II effort, and who suffered injury or death as a result of such service. These groups include merchant seamen, saltwater fishermen, auxiliary services personnel, ferry pilots of the RAF Transport Command, firefighters who served in the United Kingdom, etc.

6.—Pensions in Force at Mar. 31, 1960

Service	Disability		Dependant		Disability and Dependant	
	Pensions in Force	Liability	Pensions in Force	Liability	Pensions in Force	Liability
	No.	\$	No.	\$	No.	\$
World War I.....	47,845	37,450,089	14,812	19,566,585	62,657	57,016,674
World War II.....	104,911	68,546,893	17,546	19,336,214	122,457	87,883,107
Special Force.....	1,607	898,183	171	213,463	1,778	1,111,646
Regular Force.....	1,249	667,956	485	755,987	1,734	1,423,943
Totals	155,612	107,563,121	33,014	39,872,249	188,626	147,435,370

Section 7.—War Veterans Allowances

War Veterans Allowances were first introduced in 1930 for those veterans who, as a result of their front-line service, were considered to have been pre-aged and therefore were at a disadvantage in the labour market before their time. Since then the War Veterans Allowance Act has been revised and amended on numerous occasions; each time its scope has been extended or its provisions made more generous.

The last legislative changes occurred in 1957. Effective July 1, 1957, Parliament approved certain increases in the rates of allowance payable and income ceilings. Additional changes became effective Nov. 1, 1957, including further increases in the rates of allowances and income ceilings; a change in the requirement of 20 years residence in Canada to 10 years for veterans of Commonwealth and Allied Forces; and eligibility established, from a service standpoint, for Canadian veterans who served in England during World War I for at least 365 days prior to Nov. 12, 1918.

As the Act now stands, War Veterans Allowances are payable, in Canada only, to Canadian veterans of the Northwest Field Force, the South African War, World Wars I and II, and the Korean operation; to veterans of Commonwealth and Allied Forces who were domiciled in Canada at time of enlistment, or alternatively, served during any such war concluded on or before Aug. 31, 1921, and have resided in Canada for a total period of at least 10 years. An allowance may also be payable to widows or orphans of eligible veterans. To be eligible, a veteran must have served in a theatre of actual war and, if not, he must be in receipt of a pension for disability incurred on or aggravated by service or have accepted a final payment in lieu of pension of 5 p.c. or more. Other Canadian and Allied Dual Service veterans who were members of Her Majesty's Canadian Forces during World War II, who did not serve in a theatre of actual war and who are non-pensioners but who served in both World War I and World War II and were honourably discharged from both periods of service, are also eligible.

Male veterans become eligible for allowances at age 60 and female veterans or widows of veterans at age 55. Persons in both groups, however, may be awarded allowances earlier if their physical or mental condition prevents them from maintaining themselves. The allowances are paid subject to certain financial limitations, that is, the sum of income from other sources plus the allowance may not exceed a permissible annual income. Income from other sources does not include casual earnings or other specific income exempt by statute.

The rates of allowances payable and the income ceilings in effect at Mar. 31, 1960 were as follows:—

<i>Recipient</i>	<i>Monthly Maximum Allowance</i>	<i>Annual Income Ceiling</i>
	<i>\$</i>	<i>\$</i>
Veterans and widow(er)s, single status.....	70	1,080
Veterans and widow(er)s, married status.....	120	1,740
Veterans with blind spouse.....	120	1,860
One orphan.....	40	720
Two orphans of one veteran.....	70	1,200
Three or more orphans of one veteran.....	85	1,440

The numbers of veterans and others in receipt of allowances at the close of each of the fiscal years 1956-60, together with the amounts of allowances paid, were as follows:—

<i>As at Mar. 31—</i>	<i>Veterans in Receipt of Allowances</i>	<i>Others in Receipt of Allowances</i>	<i>Total in Receipt of Allowances</i>	<i>Expenditure</i>
	<i>No.</i>	<i>No.</i>	<i>No.</i>	<i>\$</i>
1956.....	37,927	14,260	52,187	39,074,156
1957.....	39,691	15,502	55,193	41,259,185
1958.....	42,705	17,242	59,947	47,990,169
1959.....	45,859	19,045	64,904	54,870,742
1960.....	47,378	20,480	67,858	57,337,891

During the year ended Mar. 31, 1960, 65,164 cases were reviewed by the 18 District Authorities across Canada so that changes in the financial, physical or domestic circumstances of the recipients concerned might be reflected in the allowance being paid. Over the same period the War Veterans Allowance Board at Ottawa (see p. 344) reviewed 24,287 cases to ensure uniformity in the application of the provisions of the legislation in all districts. During the year, 586 appeals from adjudications were dealt with by the War Veterans Allowance Board, 58 being allowed and 528 disallowed.

Section 8.—Veterans Commissions and Boards

Canadian Pension Commission.—The Canadian Pension Commission is a statutory body charged with the administration of the Pension Act and the Civilian War Pensions and Allowances Act. The members of the Commission are appointed by the Governor in Council who may also impose upon the Commission duties in respect of any grants in the nature of pensions, etc., made under any statute other than the Pension Act. The Commission reports to Parliament through the Minister of Veterans Affairs.

It is the responsibility of the Commission to adjudicate on claims for injury or disease resulting in disability or death incurred during service with the Canadian Navy, Army or Air Force during wartime or peacetime. The Commission may also supplement certain awards of pension made by the British or Allied Governments (see 1956 Year Book, p. 304).

The Commission's representatives, called Pension Medical Examiners, are located in most of the district offices of the Department of Veterans Affairs across the country.

War Veterans Allowance Board.—The War Veterans Allowance Board is a statutory body responsible for the administration of the War Veterans Allowance Act. The members are appointed by the Governor in Council and the Board reports to Parliament through the Minister of Veterans Affairs.

The administration of the Act has been almost completely decentralized through 18 District Authorities located in the district offices of the Department of Veterans Affairs across Canada. These Authorities make the initial decisions on War Veterans Allowance applications and arrange for the necessary investigations to be made by officers of the Veterans Welfare Services Branch of the Department.

The Board, which is located in Ottawa, defines policy, standardizes administrative procedures and reviews decisions of the District Authorities, either to adjudicate appeals from decisions of the Authorities or to assure the consistent administration of the Act throughout Canada.

Commonwealth War Graves Commission.—All Commonwealth Governments are members of the Commission, incorporated by Royal Charter in 1917, and are represented by their High Commissioners in London. The present title of the Commission, formerly known as the Imperial War Graves Commission, was adopted on Apr. 1, 1960 following the granting of a supplemental Royal Charter.

The Commission is entrusted with the marking and maintenance, in perpetuity, of the graves of those of the British Empire and Commonwealth Armed Forces who lost their lives between Aug. 4, 1914 and Aug. 31, 1921, and between Sept. 3, 1939 and Dec. 31, 1947. The Commission erects memorials to commemorate those with no known grave. The Minister of Veterans Affairs is the Agent of the Commission in Canada and the office of the Secretary-General of the Canadian Agency is in the Veterans Affairs Building, Ottawa.

The area of responsibility of the Canadian Agency is the Continent of North America but it has also certain duties of inspection in Argentina, the Bahamas, Barbados, Bermuda, Brazil, British Guiana, British Honduras, Chile, Costa Rica, Cuba, Falkland Islands, French West Indies, Guatemala, Hawaiian Islands, Jamaica, Leeward Islands, Netherlands Antilles, Panama Canal Zone, Peru, Puerto Rico, Trinidad, Uruguay and Windward Islands.

In North America the Agency is responsible for about 13,000 war graves in more than 2,000 cemeteries. Approximately 3,300 servicemen of both wars, missing in operations while based in North America, are commemorated on the memorials erected at Victoria, B.C., and at Halifax, N.S.

On July 1, 1959, Her Majesty the Queen unveiled a memorial in Ottawa commemorating by name approximately 800 Commonwealth Air Forces servicemen who lost their lives in the Second World War while on operations from bases in Canada and the United States, and who have no known grave.

CHAPTER VII.—CRIME AND DELINQUENCY*

CONSPECTUS

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NOTE.—*The interpretation of the symbols used in the tables throughout the Year Book will be foundacing p. 1 of this volume.*

Section 1.—Canadian Criminal Law and Procedure†

The system under which justice is administered in a State is never rigid. To have it so would be neither expedient nor indeed possible. A judicial system must grow and adapt itself to the requirements of the people and the exact limits of the powers of different legislative bodies require continued definition.

The criminal law of Canada has as its foundation the criminal common law of England built up through the ages and consisting first of customs and usages, and later expanded by principles enunciated by generations of judges. There is no statutory declaration of the introduction of English criminal law into those parts of Canada that are now the Provinces of New Brunswick, Nova Scotia and Prince Edward Island. Its introduction there depends upon a principle of the common law itself by which English law was declared to be in force in uninhabited territory discovered and planted by British subjects, except in so far as local conditions made it inapplicable. The same may be said of Newfoundland although the colony dealt with the subject in a statute of 1837. In Quebec its reception depends upon a Royal Proclamation of 1763 and the Quebec Act of 1774. In each of the other provinces and in the Yukon and Northwest Territories the matter has been dealt with by statute.

The judicial systems of the provinces as they exist today are based upon the British North America Act of 1867. Sect. 91 of the Act provides that "The exclusive legislative authority of the Parliament of Canada extends to . . . the criminal law, except the constitution of courts of criminal jurisdiction but including the procedure in criminal matters". By Sect. 92 (14), the legislature of the province exclusively may make laws in relation to "the administration of justice in the province, including the constitution, maintenance and organization of provincial courts, both of civil and criminal jurisdiction and including procedure in civil matters in its courts". The Parliament of Canada may, however (Sect. 101), establish any additional courts for the better administration of the laws of Canada. It should be noted that the Statute of Westminster, 1931, effected important changes particularly by abrogating the Colonial Laws Validity Act, 1865 (U.K.), and confirming the right of a dominion to make laws having extraterritorial operation. Particulars of the federal judiciaries are given in Chapter II, pp. 101-102, and provincial judiciaries are dealt with briefly at pp. 102-103; more detailed information on provincial judiciaries is given in the 1954 Year Book, pp. 48-55.

* Except as otherwise credited, this Chapter has been revised in the Judicial Section, Health and Welfare Division, Dominion Bureau of Statistics.

† Prepared by the Criminal Law Section, Department of Justice, Ottawa.

At the time of Confederation each of the colonies affected had its own body of statutes relating to the criminal law. In 1869, in an endeavour to assimilate them into a uniform system applicable throughout Canada, Parliament passed a series of Acts some of which dealt with offences of special kinds and others with procedure. Most notable of the latter was the Criminal Procedure Act, but other Acts provided for the speedy trial or summary trial of indictable offences, the powers and jurisdiction of justices of the peace in summary conviction matters and otherwise, and the procedure in respect of juvenile offenders.

Codification of the criminal law through a Criminal Code Bill founded on the English draft code of 1878, Stephen's *Digest of Criminal Law*, Burbridge's *Digest of the Canadian Criminal Law*, and the relevant Canadian statutes was brought about by the Minister of Justice, Sir John Thompson, in 1892. This Bill became the Criminal Code of Canada and came into force on July 1, 1893. It must be remembered, however, that the Criminal Code was not exhaustive of the criminal law. It was still necessary to refer to English law in certain matters of procedure and it was still possible to prosecute for offences at common law. Moreover, Parliament has declared offences against certain other Acts, e.g., the Opium and Narcotic Drug Act, to be criminal offences and the same was done in the Defence of Canada Regulations and the Wartime Prices and Trade Board Regulations (neither now in force) promulgated under the authority of the War Measures Act.

It is often difficult to distinguish between 'law' and 'procedure'. Procedure may be interpreted to relate simply to the organic working of the courts but, in a wider sense, it may also affect the rights or alter the legal relations arising out of any given state of facts. For present purposes it will be useful to note that writers on jurisprudence describe law as being substantive or adjective. "Substantive law is concerned with the ends which the administration of justice seeks; procedural (adjective) law deals with the means and instruments by which these ends are to be obtained."* With reference to the criminal law the former may be taken to include the provisions concerning criminal responsibility, the definition of 'offences' and the punishment for those offences, and the latter to include provisions for enforcement, e.g., powers to search and to arrest, for the modes of trial and for the proof of facts. Broadly speaking, the Criminal Code observes the distinction although it might appear that the provisions for preventive detention of habitual criminals and criminal sexual psychopaths partake of the nature of both classes.

An examination and study of the Criminal Code was authorized by Order in Council dated Feb. 3, 1949, and the Commission assigned the task of revising the Code presented its report with a draft Bill in February 1952. After coming before successive sessions of Parliament it was finally enacted on June 15, 1954 and the new Criminal Code (SC 1953-54, c. 51) came into effect on Apr. 1, 1955. A short outline of the system that existed under the repealed Code together with the major revisions effected by the new Code is given in the 1955 Year Book, pp. 295-298.

Since the new Code came into force several amendments have been made, for the most part in relation to procedure. Among the most notable of these, as well in point of procedure as of substance, are: an amendment in 1956 providing that motions for leave to appeal to the Supreme Court of Canada in criminal cases should be heard by a quorum (at least five) of judges of that Court instead of a single judge; amendments effected by SC 1959, c. 41, providing a statutory extension of the definition of "obscenity" and making provision for seizure and condemnation of offending material without a charge necessarily being laid against any person; extensive amendments relating to the allowing of time for payment of fines; amendments dealing with offences committed in aircraft in flight over the high seas; an amendment forbidding the publication in a newspaper or broadcast of a report that any admission or confession was tendered in evidence at a preliminary inquiry or a report of the nature of such admission or confession unless the accused has been discharged, or, if the accused has been committed for trial, the trial has ended.

The Parole Act (SC 1958, c. 38), brought into force on Feb. 15, 1959, revises the parole system and provides for the establishment of a National Parole Board. (See p. 371.)

* Salmond on *Jurisprudence*, 7th Edition, p. 496.

Section 2.—Adult Offenders and Convictions

The main interest in adult criminal statistics is concerned with those persons guilty of the more serious crimes. Such offenders are fewer than those who commit summary conviction offences but, from the standpoint of the protection of society, they are more important.

Statistics of indictable crimes are based on *persons*. When a person is prosecuted at the same hearing for several offences, one of those offences is selected for tabulation. The rule followed is to select the offence for which the proceedings were carried to the furthest stage—to conviction and sentence where the prisoner was tried on several charges; where there were several convictions, the offence selected is that for which the heaviest punishment was awarded; where the final result of proceedings on two or more charges was the same, the most serious offence (as measured by the maximum penalty allowed by the law) appears in the tables. Where a person was prosecuted for one offence and convicted of another (e.g., charged with murder and convicted of manslaughter), the case appears only under the offence for which he was convicted. Statistics of summary conviction offences (p. 357) are based on *convictions*.

The figures include only cases finally determined within the year. Those not entirely disposed of within the year (e.g., tried but sentence postponed) are held over for the next year's report.

The new Criminal Code, which became law in 1954 (SC 1953-54, c. 51), necessitated the alteration of certain statistical classifications. For instance, in the classification of indictable offences regroupings were made and some items added and others dropped. Also, indictable offences under the Criminal Code were shown separately from those under federal statutes. Summary convictions were classified as offences under the Criminal Code, federal statutes, provincial statutes and municipal by-laws, and methods of trial were arranged to conform with the provisions of the new Criminal Code. Thus, any comparisons between the data for 1956, 1957 and 1958 and the data published for previous years should be made with care.

Subsection 1.—Adults Convicted of Indictable Offences

During 1958 the courts of Canada dealt with 38,415 adults charged with 69,983 indictable offences, of whom 34,546 were found guilty of 62,839 offences. These figures show an increase over those of 1957 when 35,458 adults were charged with 61,964 indictable offences and 31,765 were found guilty of 54,900 offences.

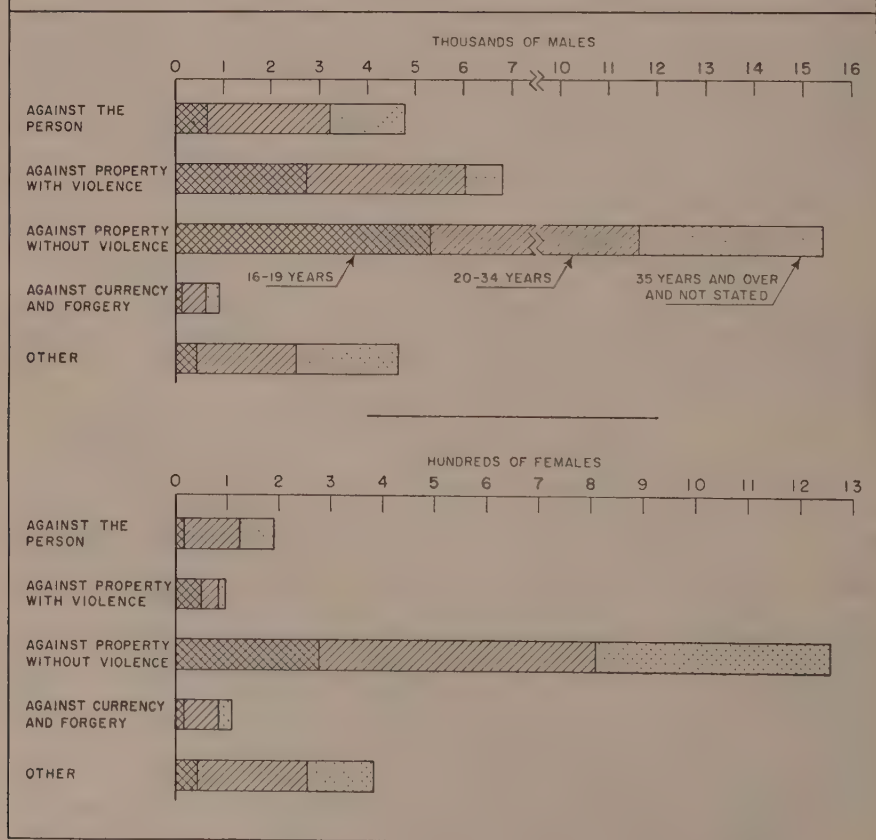
1.—Persons Convicted of Indictable Offences, with Ratio per 100,000 Population 16 Years of Age or Over, by Province, 1957 and 1958

Province or Territory	Persons Convicted		Persons Convicted per 100,000 Population 16 Years of Age or Over	
	1957	1958	1957	1958
	No.	No.	No.	No.
Newfoundland.....	703	575	290	231
Prince Edward Island.....	78	134	125	213
Nova Scotia.....	1,234	1,353	275	299
New Brunswick.....	827	991	240	283
Quebec.....	6,678	7,127	222	232
Ontario.....	11,495	12,953	300	330
Manitoba.....	2,246	1,501	390	260
Saskatchewan.....	1,176	1,558	205	271
Alberta.....	3,045	3,766	405	489
British Columbia.....	4,216	4,512	409	425
Yukon and Northwest Territories.....	67	76	345	382
Canada.....	31,765	34,546	292	311

Indictable offences are classified according to the main sources of the criminal law—the Criminal Code and Federal Statutes. Indictable offences under the Criminal Code are grouped into six classes as shown in Table 2. In 1958 persons convicted of assaults of various kinds and obstructing police represented 77.5 p.c. of Class I, which covers offences against the person. In that year 16 persons were convicted of murder, 11 of attempted murder and 82 of manslaughter as compared with 8, 10 and 110, respectively, in 1957.

Classes II to V deal with offences against property. Thefts predominate among the offences in these classes, and breaking and entering and robbery, serious crimes which involve acts of violence, are the next most numerous. In Class VI, which includes miscellaneous offences, the most numerous convictions are for offences connected with the improper operation of motor vehicles. In 1958 there were 488 offenders under the Opium and Narcotic Drug Act, of whom 397 were convicted of possessing heroin and 61 of trafficking; 334 were males and 442 were born in Canada. British Columbia courts convicted 61.7 p.c. of the drug offenders and Ontario courts 29.5 p.c.

CONVICTIONS OF MALES AND FEMALES FOR INDICTABLE OFFENCES,
BY CLASS OF OFFENCE AND AGE GROUP



2.—Adults Charged and Convicted of Indictable Offences, by Class of Offence, 1957 and 1958

Class of Offence	1957			1958			Increase or Decrease in Persons Convicted
	Adults Charged	Adults Convicted		Adults Charged	Adults Convicted		
		M.	F.		M.	F.	
Criminal Code	No.	No.	No.	No.	No.	No.	p.c.
Class I.—Offences against the Person.	6,326	4,915	235	5,987	4,685	190	- 5.3
Abduction and kidnapping.....	59	45	1	29	26	1	-41.3
Assault, causing bodily harm, common, on police and obstruction...	4,358	3,482	156	4,191	3,323	134	-5.0
Offences against females.....	819	601	21	838	631	13	+3.5
Manslaughter, motor manslaughter and murder.....	233	115	3	196	96	2	-16.9
Attempted murder, causing bodily harm and danger.....	177	110	16	153	114	12	—
Duties tending to preservation of life.....	55	49	3	58	50	1	- 1.9
Other offences against the person...	625	513	35	522	445	27	-13.9
Class II.—Offences against Property with Violence.	6,062	5,507	81	7,408	6,799	97	+23.4
Breaking and entering a place, extortion and robbery.....	6,062	5,507	81	7,408	6,799	97	+23.4
Class III.—Offences against Property without Violence.	15,911	13,535	998	17,675	14,839	1,237	+10.6
Fraud and false pretences.....	2,083	1,674	151	2,242	1,775	171	+ 6.6
Having in possession.....	1,402	1,162	49	1,506	1,228	55	+ 5.9
Theft.....	12,426	10,699	798	13,927	11,836	1,011	+11.7
Class IV.—Malicious Offences against Property.	669	543	32	683	567	21	+ 2.3
Arson and other fires.....	100	64	10	105	85	2	+17.6
Other interference with property....	569	479	22	578	482	19	—
Class V.—Forgery and Other Offences Relating to Currency...	823	721	63	1,057	906	109	+29.5
Forgery and uttering forged documents.....	812	711	63	1,029	881	107	+27.6
Offences relating to currency.....	11	10	—	28	25	2	+170.0
Class VI.—Other Offences.	5,123	4,438	237	5,006	4,350	224	- 2.2
Criminal negligence in operation of motor vehicles.....	155	133	1	103	84	—	-37.3
Driving while ability to drive is impaired.....	2,056	1,902	25	2,116	1,950	29	+ 2.7
Driving while intoxicated.....	268	244	1	177	155	1	-36.3
Gaming, betting and lotteries.....	852	728	66	449	397	24	-47.0
Keeping bawdy houses.....	133	41	63	121	29	72	- 2.9
Various other offences.....	1,659	1,390	81	2,040	1,735	98	+24.6
Totals, Criminal Code.....	34,914	29,659	1,646	37,816	32,146	1,878	+ 8.7
Federal Statutes							
Opium and Narcotic Drug Act.....	482	285	115	558	327	154	+20.3
Other statutes.....	62	59	1	41	39	2	-31.7
Totals, Federal Statutes.....	544	344	116	599	366	156	+13.5
Grand Totals.....	35,458	30,003	1,762	38,415	32,512	2,034	+ 8.8

¹ Includes abortion, indecent assault on female, sexual intercourse and attempt, incest, procuring, rape, attempted rape and seduction.

Table 3 shows that in 1958, 52.8 p.c. of the persons convicted of indictable offences had not gone beyond elementary school grades in education, 48.9 p.c. were 24 years of age or younger, 9.4 p.c. were 45 years of age or over, and 74.4 p.c. lived in urban centres. Of these offenders, 94.1 p.c. were males, 88.5 p.c. were born in Canada, 61.3 p.c. were unmarried, 18.5 p.c. were recorded as labourers and 10.2 p.c. had no remunerative employment.

3.—Persons Convicted of Indictable Offences classified by Occupation, Marital Status, Sex, Birthplace, etc., 1957 and 1958

Item	1957	1958	Item	1957	1958
No.	No.	No.	No.	No.	No.
Total Convictions.....	31,765	34,546	EDUCATIONAL STATUS		
TYPE OF OCCUPATION			Unable to read or write.....	468	499
Agriculture.....	1,415	1,662	Elementary.....	16,852	18,234
Armed Services.....	510	478	High school.....	10,679	11,707
Clerical.....	1,074	1,108	Superior.....	554	840
Commercial and managerial.....	2,318	1,899	Grade not stated.....	743	335
Construction.....	3,847	4,911	Not given.....	2,469	2,931
Finance.....	47	28			
Fishing, trapping and logging.....	1,441	1,578	AGE		
Labourer.....	6,226	6,392	16 to 19 years.....	8,669	9,614
Manufacturing and mechanical.....	3,656	3,664	20 to 24 years.....	6,526	7,289
Mining.....	669	800	25 to 44 years.....	12,423	13,182
Service—			45 years or over.....	3,076	3,248
Domestic.....	630	858	Not given.....	1,071	1,213
Personal.....	819	1,048			
Professional.....	312	315	BIRTHPLACE		
Public and protective.....	73	58	Canada.....	29,014	30,569
Other.....	84	119	British Isles and other Common-		
Student.....	1,200	1,531	wealth.....	721	803
Transportation and communica-			United States.....	268	319
tions.....	3,286	3,132	Europe.....	1,235	1,499
Unemployed and retired (incl.			Asia.....	74	49
housewives).....	2,910	3,529	Other foreign countries.....	11	11
Not given.....	1,248	1,436	Not given.....	442	1,296
MARITAL STATUS			RESIDENCE		
Single.....	19,276	21,183	Urban centres.....	23,921	25,703
Married.....	9,931	10,138	Rural districts.....	6,593	6,960
Widowed.....	324	359	Indeterminate.....	541	801
Divorced.....	229	283	Not given.....	710	1,082
Separated.....	629	1,161			
Not given.....	1,076	1,422			
SEX					
Male.....	30,003	32,512			
Female.....	1,762	2,034			

Female Offenders.—There were 2,034 female offenders convicted of indictable offences in 1958, 39.3 p.c. of whom were in Ontario, 17.6 p.c. in British Columbia and 15.0 p.c. in Quebec. Of the total females convicted in that year, 52.4 p.c. were found guilty of theft and having in possession, 8.4 p.c. of false pretences and fraud and 6.6 p.c. of various assaults.

4.—Females Convicted of Indictable Offences, by Province, 1957 and 1958

Province or Territory	Females Convicted		Females Convicted to Total Convictions	
	1957	1958	1957	1958
	No.	No.	p.c.	p.c.
Newfoundland.....	45	51	6.4	8.9
Prince Edward Island.....	1	1	1.3	1.0
Nova Scotia.....	55	70	4.5	5.2
New Brunswick.....	29	21	3.5	2.1
Quebec.....	265	306	4.0	4.3
Ontario.....	665	799	5.3	6.2
Manitoba.....	222	112	9.9	7.5
Saskatchewan.....	51	92	4.3	5.9
Alberta.....	154	220	5.1	5.8
British Columbia.....	271	358	6.4	7.9
Yukon and Northwest Territories.....	4	4	6.0	5.3
Canada.....	1,762	2,034	5.5	5.9

Multiple Convictions.—Table 5 shows the number of persons having more than one conviction at a court appearance for the years 1954-58. Multiple convictions occur most often in cases of forgery and uttering, false pretences, theft, having in possession, and breaking and entering.

5.—Persons Convicted of More than One Offence at the Time of Trial compared with Persons Convicted of One Offence, 1954-58

Item	1954	1955	1956	1957	1958
	No.	No.	No.	No.	No.
Persons Convicted of—					
2 offences.....	3,265	3,280	3,463	4,308	4,685
3 offences.....	1,713	1,089	1,101	1,337	1,469
4 offences.....	256	528	607	826	852
5 offences.....	154	306	306	394	463
6 offences.....	89	189	209	259	290
7 offences.....	58	126	119	146	191
8 offences.....	44	113	108	159	180
9 offences.....	27	91	83	100	110
10 offences.....	54	56	69	87	104
11 to 20 offences.....	194	200	252	288	364
21 offences and over.....	65	92	76	95	163
Totals, Convicted of More than One Offence.....	5,919	6,070	6,393	7,999	8,871
Totals, Convicted of One Offence.....	24,929	22,203	21,020	23,766	25,675
Grand Totals.....	30,848	28,273	27,413	31,765	34,546

Disposition of Cases and Recidivism.—Of all suspects before the courts for indictable offences in 1958, 89.9 p.c. were adjudged guilty; the convictions against males (90.1 p.c.) constituted a higher percentage than those against females (87.2 p.c.) and varied considerably between provinces. New Brunswick and Prince Edward Island showed the highest percentages (98.5 and 97.1 p.c., respectively) of convictions and Ontario the lowest (87.0 p.c.).

6.—Persons Charged and Convictions for Indictable Offences, by Province, 1957 and 1958

Province or Territory	1957			1958		
	Charges	Convictions		Charges	Convictions	
	No.	No.	p.c.	No.	No.	p.c.
Newfoundland.....	723	703	97.2	604	575	95.2
Prince Edward Island.....	80	78	97.5	138	134	97.1
Nova Scotia.....	1,462	1,234	84.4	1,524	1,353	88.8
New Brunswick.....	848	827	97.5	1,006	991	98.5
Quebec.....	7,394	6,678	90.3	7,878	7,127	90.5
Ontario.....	13,319	11,495	86.3	14,896	12,953	87.0
Manitoba.....	2,309	2,246	97.3	1,550	1,501	96.8
Saskatchewan.....	1,244	1,176	94.5	1,629	1,558	95.6
Alberta.....	3,274	3,045	93.0	4,003	3,766	94.1
British Columbia.....	4,736	4,216	89.0	5,105	4,512	88.4
Yukon and Northwest Territories.....	69	67	97.1	82	76	92.7
Canada.....	35,458	31,765	89.6	38,415	34,546	89.9

In 1958, 40.8 p.c. of the convicted persons had no previous conviction, 10.0 p.c. had previously been found guilty of one offence and 23.8 p.c. had two or more earlier convictions. Court records for the other 25.4 p.c. were not obtained.

7.—Persons Charged with Indictable Offences, Disposition of Cases and Recidivism, 1957 and 1958

Item	1957	1958	Item	1957	1958
	No.	No.		No.	No.
Charges.....	35,458	38,415	Convictions of males.....	30,003	32,512
Acquittals.....	3,564	3,686	Convictions of females.....	1,762	2,034
Disagreement of jury.....	5	7	First convictions.....	14,070	14,091
Stay of proceedings.....	69	128	Second convictions.....	3,083	3,470
No Bill.....	18	11	Reiterated convictions.....	6,557	8,209
Detention because of insanity.....	37	37	Not given.....	8,055	8,776

Sentences.—In 1958, 25.9 p.c. of the persons convicted of indictable offences were fined, 34.0 p.c. were sent to gaol without option of fine, 6.3 p.c. were committed to reformatories and 8.3 p.c. to penitentiaries, and 25.5 p.c. were given suspended sentences with or without probation. One habitual criminal was given preventive detention, eight persons received a life sentence and 16 were given the death penalty. The proportions in 1958 were much the same as in recent preceding years.

8.—Sentences Given for Indictable Offences, by Province, 1958

Sentence	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Option of fine.....	210	37	389	289	1,467	3,130	479	1,157	581	1,181	14	8,934
Gaol—												
Under one year.....	152	48	321	318	2,237	3,128	348	521	1,407	1,203	48	9,731
One year or over.....	39	3	15	46	290	530	118	103	397	458	2	2,001
Reformatory.....	—	—	5	—	95	1,628	32	—	—	405	—	2,165
Penitentiary—												
Two years and under five.	11	9	174	99	892	533	67	254	77	342	6	2,464
Five years and under ten.	—	—	4	5	112	109	7	16	4	50	—	307
Ten years and under fourteen.	—	—	1	—	40	29	—	2	—	8	—	80
Fourteen years or over....	—	—	—	—	13	8	—	—	—	1	—	22
Life.....	—	—	1	—	4	2	—	1	—	—	—	8
Death.....	—	—	2	1	2	6	1	—	2	2	—	16
Suspended sentence without probation.....	162	37	139	231	1,800	1,002	397	286	149	285	5	4,493
Suspended sentence with probation.....	1	—	302	2	175	2,848	52	244	123	577	1	4,325
Totals.....	575	134	1,353	991	7,127	12,953	1,501	2,584	2,740	4,512	76	34,546

Court Proceedings.—In 1958, 64.1 p.c. of the persons tried by a judge and jury were convicted; trials by a judge without a jury brought convictions in 76.9 p.c. of the cases so tried; trials by a magistrate with consent ended in convictions in 92.4 p.c.; and those by a magistrate who has absolute jurisdiction, in 89.7 p.c. of the cases. Of the persons charged with an indictable offence, 92.6 p.c. were tried by magistrate or juvenile and family courts, 4.7 p.c. in county and district courts and 2.7 p.c. in higher courts.

9.—Method of Trial of Persons Charged with Indictable Crimes, showing Disposition of Cases, by Sex and by Province, 1958

Method of Trial and Sex	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
By Judge and Jury—												
Conviction.....M.	4	—	30	7	114	229	30	25	14	72	1	526
F.	—	—	3	—	—	9	4	2	2	1	—	21
Acquittal.....M.	8	—	18	2	26	118	9	19	3	55	3	261
F.	—	—	1	—	1	8	1	1	—	2	—	14
Detention because of insanity.....M.	—	—	—	—	—	3	—	1	—	—	—	4
F.	—	—	—	—	1	—	—	—	—	—	—	1
Disagreement of jury..												
Stay of proceedings....M.	—	—	—	2	—	14	—	2	1	7	—	26
No Bill.....												
By a Judge without Jury—												
Conviction.....M.	—	10	42	8	817	252	17	25	166	114	2	1,453
F.	—	—	—	—	26	11	1	—	20	7	—	65
Acquittal.....M.	—	3	7	—	247	82	4	7	38	32	2	422
F.	—	—	1	—	9	5	—	1	5	4	—	25
Detention because of insanity.....M.	—	—	—	—	—	1	—	—	1	—	—	2
Stay of proceedings....M.	—	—	—	—	—	—	1	—	4	1	—	6
F.	—	—	—	—	—	—	—	—	2	—	—	2
By a Magistrate with Consent—												
Conviction.....M.	263	68	629	636	3,415	7,470	767	845	1,984	2,053	55	18,190
F.	21	—	22	9	80	339	48	28	85	174	3	809
Acquittal.....M.	10	—	60	6	153	853	2	20	82	145	1	1,332
F.	—	—	7	1	10	64	—	2	11	25	—	120
Detention because of insanity.....M.	—	—	5	—	12	4	—	—	—	3	—	24
F.	—	—	—	—	—	—	—	—	—	1	—	1
Stay of proceedings....M.	—	—	—	—	—	—	12	—	1	47	—	60
F.	—	—	—	—	—	—	—	—	—	15	—	15
By a Magistrate, Absolute Jurisdiction—												
Conviction.....M.	252	55	582	319	2,475	4,203	575	571	1,382	1,915	14	12,343
F.	30	1	45	12	200	440	59	62	113	176	1	1,139
Acquittal.....M.	10	1	64	3	261	741	11	18	86	196	—	1,391
F.	1	—	7	1	29	50	—	—	3	30	—	121
Detention because of insanity.....M.	—	—	1	—	2	—	—	—	—	2	—	5
Stay of proceedings....M.	—	—	—	—	—	—	9	—	—	28	—	37
Totals, Persons Charged.	604	138	1,524	1,006	7,878	14,896	1,550	1,629	4,003	5,105	82	38,415
Totals, Persons Convicted.	575	134	1,353	991	7,127	12,953	1,501	1,558	3,766	4,512	76	34,546

10.—Persons Charged and Convicted of Indictable Crimes according to Trial Court, by Province, 1957 and 1958

Province or Territory and Item	1957					1958				
	Persons Charged and Convicted by—					Persons Charged and Convicted by—				
	Police Magistrate and Municipal Court	Juvenile or Family Court	County Court	Higher Court	Totals	Police Magistrate and Municipal Court	Juvenile or Family Court	County Court	Higher Court	Totals
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland—										
Charged.....	635	72	—	16	723	533	59	—	12	604
Convicted.....	626	66	—	11	703	513	58	—	4	575
Prince Edward Island—										
Charged.....	70	—	10	—	80	125	—	13	—	138
Convicted.....	70	—	8	—	78	124	—	10	—	134
Nova Scotia—										
Charged.....	1,357	—	59	46	1,462	1,421	1	50	52	1,524
Convicted.....	1,172	—	40	22	1,234	1,277	1	42	33	1,353
New Brunswick—										
Charged.....	817	—	12	19	848	986	1	9	10	1,006
Convicted.....	804	—	10	13	827	975	1	8	7	991
Quebec—										
Charged.....	5,402	1,065	773	154	7,394	5,539	1,098	1,099	142	7,878
Convicted.....	4,963	1,047	559	109	6,678	5,091	1,079	843	114	7,127
Ontario—										
Charged.....	12,504	8	511	296	13,319	14,124	40	354	378	14,896
Convicted.....	10,921	8	371	195	11,495	12,414	28	264	237	12,953
Manitoba—										
Charged.....	2,047	168	32	62	2,309	1,318	165	23	44	1,550
Convicted.....	2,008	167	22	49	2,246	1,286	163	18	34	1,501
Saskatchewan—										
Charged.....	1,186	4	36	18	1,244	1,546	—	33	50	1,629
Convicted.....	1,139	3	22	12	1,176	1,506	—	25	27	1,558
Alberta—										
Charged.....	3,066	1	21	186	3,274	3,747	—	53	203	4,003
Convicted.....	2,892	1	17	135	3,045	3,564	—	45	157	3,766
British Columbia—										
Charged.....	4,158	296	133	149	4,736	4,258	552	158	137	5,105
Convicted.....	3,749	292	93	82	4,216	3,783	535	121	73	4,512
Yukon and Northwest Territories—										
Charged.....	58	—	1	10	69	74	—	4	4	82
Convicted.....	58	—	1	8	67	73	—	2	1	76
Canada—										
Charged.....	31,300	1,614	1,588	956	35,458	33,671	1,916	1,796	1,032	38,415
Convicted.....	28,402	1,584	1,143	636	31,765	30,606	1,875	1,378	687	34,546

Subsection 2.—Young* Adult Offenders (16-24 Years)

Young men and women from 16 to 24 years of age form 47.6 p.c. of the criminal population who commit indictable offences but they comprise less than 19.6 p.c. of the total population 16 years of age or over. As this age group includes some of the most daring offenders who may be already experienced criminals as well as first offenders likely to be turned from crime by further education and training, it seems worth while to give consideration to offenders in this group as distinct from offenders in the older age groups.

Of the young offenders in 1958, 56.9 p.c. were still under 20 years of age and 72.0 p.c. were tried in three provinces—Ontario 35.9 p.c., Quebec 23.5 p.c. and British Columbia 12.6 p.c.

11.—Young Adult Offenders, by Age Group, Sex and Province, 1957 and 1958

Year, Age Group and Sex	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1957												
16 - 17 years.....M.	91	9	194	97	1,192	1,560	185	181	341	633	1	4,484
F.	2	1	9	1	38	43	25	9	14	36	—	178
18 - 19 ".....M.	103	14	162	79	726	1,503	238	147	372	483	11	3,838
F.	3	—	8	6	20	63	20	8	20	18	3	169
20 - 24 ".....M.	142	22	274	160	1,180	2,229	430	257	658	827	11	6,190
F.	12	—	6	4	45	139	33	9	39	48	1	336
Totals, 1957.....	353	46	653	347	3,201	5,537	931	611	1,444	2,045	27	15,195
1958												
16 - 17 years.....M.	86	17	226	122	1,266	1,714	178	197	430	671	4	4,911
F.	5	—	8	3	54	57	13	9	24	38	—	211
18 - 19 ".....M.	84	24	197	129	969	1,618	201	186	393	494	5	4,300
F.	4	1	8	2	32	64	12	12	25	32	—	192
20 - 24 ".....M.	129	27	298	239	1,600	2,455	279	282	719	830	30	6,888
F.	10	—	11	4	58	160	22	20	55	61	—	401
Totals, 1958.....	318	69	748	499	3,979	6,068	705	706	1,646	2,126	39	16,903

In 1958, six of the 16 men found guilty of murder, 21 of the 80 convicted of manslaughter and 25 of the 52 found guilty of rape were under 25 years of age; 67.2 p.c. of the men convicted of breaking and entering, extortion and robbery were in that group as well as 53.6 p.c. of those found guilty of offences against property without violence (which include all thefts), 54.3 p.c. of those who maliciously damaged property, 48.5 p.c. of those found carrying offensive weapons and 62.6 p.c. of the prison escapees.

There were 2,034 female offenders in 1958, 804 of them under 25 years of age; 436 of the young offenders were guilty of theft and having in possession. Of the 154 women convicted under the Opium and Narcotic Drug Act, 46 were in the young adult group as were 52 of the 107 convicted of forgery and uttering; 12 of the 16 female prison escapees were also young women.

12.—Young Adult Offenders Convicted of Indictable Offences, by Class of Offence and Sex, 1957 and 1958

Class of Offence	1957		1958	
	Males	Females	Males	Females
	No.	No.	No.	No.
Criminal Code				
Class I.—Offences against the Person.....	1,780	68	1,734	58
Abduction and kidnapping.....	32	—	20	1
Assault, causing bodily harm, common, on police and obstruction.....	1,298	39	1,269	34
Offences against females ¹	230	9	241	3
Manslaughter, motor manslaughter and murder.....	35	2	27	1
Attempted murder, causing bodily harm and danger.....	35	3	41	6
Duties tending to preservation of life.....	3	—	1	—
Other offences against the person.....	147	15	135	13

¹ Includes abortion, indecent assault on female, sexual intercourse and attempt, incest, procuring, rape, attempted rape and seduction.

12.—Young Adult Offenders Convicted of Indictable Offences, by Class of Offence and Sex, 1957 and 1958—concluded

Class of Offence	1957		1958	
	Males	Females	Males	Females
	No.	No.	No.	No.
Criminal Code—concluded				
Class II.—Offences against Property with Violence	3,621	52	4,565	69
Breaking and entering a place, extortion and robbery.....	3,621	52	4,565	69
Class III.—Offences against Property without Violence ...	7,370	417	7,948	500
Fraud and false pretences.....	389	55	365	64
Having in possession.....	541	24	596	25
Theft.....	6,440	338	6,987	411
Class IV.—Malicious Offences against Property	292	16	308	5
Arson and other fires.....	25	4	38	—
Other interference with property.....	267	12	270	5
Class V.—Forgery and Other Offences Relating to Currency	270	29	317	52
Forgery and uttering forged documents.....	268	29	314	52
Offences relating to currency.....	2	—	3	—
Class VI.—Other Offences	1,136	68	1,162	74
Criminal negligence in operation of motor vehicles.....	54	1	34	—
Driving while ability to drive is impaired.....	310	1	314	3
Driving while intoxicated.....	35	1	19	1
Gaming, betting and lotteries.....	27	2	21	—
Keeping bawdy houses.....	2	17	—	22
Various other offences.....	708	46	774	48
Totals, Criminal Code	14,469	650	16,034	758
Federal Statutes				
Opium and Narcotic Drug Act.....	38	33	59	46
Other statutes.....	5	—	6	—
Totals, Federal Statutes	43	33	65	46
Grand Totals	14,512	683	16,099	804

The sentences meted out to these young people vary somewhat from those given to offenders over 24 years of age. Usually a higher proportion of them are given suspended sentences, put on probation or sent to reformatories and a lower proportion fined or given gaol sentences.

13.—Disposition of Sentences for Indictable Offences, by Sex, 1957 and 1958

Disposition of Sentences	1957				1958			
	16-24 Years		25 Years or Over		16-24 Years		25 Years or Over	
	M.	F.	M.	F.	M.	F.	M.	F.
	No.	No.	No.	No.	No.	No.	No.	No.
Suspended sentence.....	2,085	150	1,313	206	2,541	173	1,518	261
Probation.....	3,062	187	1,096	151	2,906	233	1,044	142
Fine.....	3,003	143	5,413	408	3,160	144	5,173	457
Gaol.....	4,136	156	5,745	247	4,711	189	6,531	301
Reformatory.....	1,383	37	494	27	1,509	48	575	33
Penitentiary.....	859	10	1,426	40	1,266	17	1,562	36
Death.....	4	—	4	—	6	—	10	—

Through the system of suspended sentence and probation supervising, many young offenders receive another chance to make good, and reformatory training gives others an opportunity to better their employment possibilities. It is interesting to note that 23.0 p.c. of the young male offenders in 1958 were recorded as labourers, indicating that they had no particular skill by which to earn a living; the proportion of male offenders 25 years or over recorded as labourers was 16.7 p.c. Those recorded as students made up 9.1 p.c. of the youths, and 11.4 p.c. were reported as unemployed as compared with 3.5 p.c. of the older men. Approximately three of every four lived in urban centres.

Subsection 3.—Convictions for Summary Conviction Offences

Offences punishable on summary conviction—those not expressly made indictable—include all offences against the Criminal Code, provincial statutes and municipal by-laws. Summary conviction offences are triable by magistrate or justice of the peace under Part XXIV of the Criminal Code or under the provincial summary convictions Acts.

It is debatable how far summary conviction offences are of a criminal nature and whether their increase indicates an increase in crime. Many are breaches of municipal by-laws and contrary to public safety, health and comfort as, for example, parking violations or practising trades without licence, but they do not involve violence, cruelty or serious dishonesty. On the other hand, offences as serious as cruelty to animals and contributing to juvenile delinquency are included under this classification and such indictable offences as common assault and driving with ability impaired may be tried on summary conviction.

Summary convictions increased by 1.7 p.c. from 2,466,762 in 1957 to 2,508,976 in 1958. Decreases were shown in Newfoundland, Saskatchewan, Yukon Territory and the Northwest Territories.

14.—Convictions for Summary Conviction Offences, by Province, 1949-58

NOTE.—Figures for 1949, 1950 and all previous years are for the 12 months ended Sept. 30; those for 1951-58 are for the calendar year. Statistics for the intervening months, October-December 1950, are given in DBS report, *Statistics of Criminal and Other Offences* (Catalogue No. 85-201). Figures for 1900-48 are given in the corresponding table of previous Year Books beginning with the 1933 edition.

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1949 . . .	..	3, 118	12, 617	13, 131	232, 132	510, 837	72, 023	16, 465	25, 551	94, 326	232	57	980, 489
1950 . . .	..	2, 095	13, 137	21, 732	280, 868	617, 565	79, 079	22, 717	28, 344	117, 729	553	172	1, 183, 991
1951 . . .	5, 022	2, 195	14, 850	25, 660	267, 648	671, 893	118, 217	22, 467	39, 956	139, 304	950	304	1, 308, 466
1952 . . .	6, 191	2, 578	14, 977	31, 905	312, 892	819, 253	135, 034	31, 618	50, 443	158, 967	1, 342	507	1, 565, 707
1953 . . .	6, 315	2, 529	17, 292	33, 308	352, 009	980, 764	135, 757	34, 764	57, 463	161, 382	1, 432	607	1, 763, 622
1954 . . .	7, 027	2, 958	18, 096	35, 003	441, 875	1, 066, 039	141, 290	46, 343	56, 408	160, 707	1, 339	482	1, 977, 567
1955 . . .	8, 585	3, 534	19, 459	38, 560	444, 143	1, 224, 654	110, 632	46, 817	58, 757	192, 589	..	46	2, 147, 776
1956 . . .	6, 899	4, 396	25, 896	34, 834	495, 660	1, 393, 510	56, 760	63, 649	71, 193	246, 595	1, 464	874	2, 401, 730
1957 . . .	15, 441	4, 085	22, 805	46, 127	486, 420	1, 381, 336	59, 689	93, 127	88, 376	265, 908	1, 812	1, 636	2, 466, 762
1958 . . .	14, 120	4, 172	24, 967	49, 815	506, 000	1, 404, 810	67, 353	59, 242	97, 136	278, 123	1, 686	1, 552	2, 508, 976

In considering statistics of summary convictions it should be remembered that such convictions are greatly influenced by the customs of the people and by the application and degree of enforcement of municipal regulations. These differ from place to place and from year to year and affect summary conviction offences more than they do indictable offences.

In 1958 decreases appeared in convictions under the Criminal Code, federal statutes, provincial statutes and municipal by-laws. Convictions for breaches of parking regulations under provincial statutes and municipal by-laws rose by 5.3 p.c.

15.—Convictions for Summary Conviction Offences, by Type, 1957 and 1958

Type of Offence	1957	1958	Increase or Decrease 1957-58
	No.	No.	p.c.
Criminal Code—			
Attempts, conspiracies, accessories, counselling.....	120	127	+ 5.8
Attempt to commit suicide.....	225	267	+18.7
Bawdy house.....	900	689	-23.4
Causing disturbance by being drunk.....	3,883	2,686	-30.8
Common assault.....	6,521	6,382	- 2.1
Communicating venereal disease.....	118	98	-16.9
Contempt of court.....	10	19	+90.0
Corrupting morals.....	164	121	-26.2
Cruelty to animals.....	56	105	+87.5
Damage not exceeding \$50 and other interference with property.....	2,853	3,072	+ 7.7
Disorderly conduct.....	11,697	13,721	+17.3
Duty of persons to provide necessities.....	1,842	1,472	-20.1
Fraudulently obtaining food or lodging.....	701	864	+23.3
Fraudulently obtaining transportation.....	71	70	- 1.4
Gaming, betting, lotteries.....	2,251	1,252	-44.4
Injuring bird or animal other than cattle.....	40	38	- 5.0
Intimidation.....	221	172	-22.2
Motor Vehicle—			
Criminal negligence in operation of motor vehicle.....	1,018	802	-21.2
Driving while ability to drive is impaired.....	17,017	17,294	+ 1.6
Driving while disqualified.....	2,705	3,784	+39.9
Driving while intoxicated.....	2,108	1,959	- 7.1
Failing to stop at scene of accident.....	2,167	2,667	+23.1
Motor vehicle equipped with smoke screen.....	156	30	-80.8
Taking motor vehicle without consent.....	1,144	1,321	+15.5
Offensive weapons.....	757	961	+26.9
Personating peace officer.....	70	78	+11.4
Recognizance, breach of.....	296	226	-23.6
Threatening letters.....	29	12	-58.6
Transporting cattle.....	22	—	-100.0
Vagrancy.....	8,053	6,911	-14.2
Other Criminal Code.....	6,508	5,221	- 5.2
Federal Statutes—			
Customs.....	152	205	+34.9
Excise.....	884	893	+ 1.0
Fisheries.....	555	905	+63.1
Food and Drugs and Inspection and Sales.....	159	234	+47.2
Harbour Board and Merchant Seamen's.....	377	377	—
Income Tax.....	8,464	7,249	-14.4
Indian—			
Intoxication.....	9,716	8,355	-14.0
Other.....	2,806	2,631	- 6.2
Juvenile Delinquents—			
Adults who contribute to delinquency.....	1,842	2,519	+36.8
Incorrigibility.....	100	235	+135.0
Inducing child to leave home, etc.....	28	40	+42.9
Lord's Day.....	214	233	+ 8.9
Opium and Narcotic Drug.....	10	42	+320.0
Railway.....	1,198	1,042	-13.0
Unemployment Insurance.....	1,408	2,482	+76.3
Weights and Measures.....	101	42	-58.4
Other federal statutes.....	3,577	2,799	-21.8
Provincial Statutes—			
Children of Unmarried Parents.....	617	634	+ 2.8
Deserted Wives and Children's Maintenance.....	3,638	3,925	+ 7.9
Game and Fisheries.....	6,349	6,249	- 1.6
Highway Traffic—			
Driving without due care and attention.....	—	41,592	—
Other traffic.....	552,953	496,926	-10.1

15.—Convictions for Summary Conviction Offences, by Type, 1957 and 1958—concluded

Type of Offence	1957	1958	Increase or Decrease 1957-58
	No.	No.	p.c.
Provincial Statutes—concluded			
Liquor Control—			
Intoxication.....	87,060	80,645	- 7.4
Other.....	49,280	52,157	+ 5.8
Master and Servant.....	858	924	+ 7.7
Medical, Dentistry and Pharmacy.....	120	144	+20.0
Mental Diseases.....	1,347	1,362	+ 1.1
Prairie and Forest Fire Prevention.....	184	399	+116.8
Protection of Children.....	1,995	2,281	+14.3
Public Health.....	291	171	-41.2
School Laws.....	391	336	-14.1
Other provincial statutes.....	19,927	20,389	+ 2.3
Municipal By-laws—			
Intoxication.....	9,503	15,304	+61.0
Traffic.....	165,680	144,652	-12.7
Other.....	37,878	38,142	+ 0.7
Prohibited parking.....	1,424,377	1,500,040	+ 5.3
Totals, Convictions.....	2,466,762	2,508,976	+ 1.7

16.—Convictions for Breaches of Traffic Regulations, by Province, 1949-58

NOTE.—See headnote to Table 14, p. 357.

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1949.....	..	519	4,084	3,729	188,003	417,016	60,127	7,274	11,112	69,545	58	761,467
1950.....	..	366	4,265	11,909	227,857	508,010	67,832	12,362	13,772	92,038	138	938,549
1951.....	1,773	580	5,802	15,641	215,222	570,895	106,262	13,325	22,923	112,738	265	1,065,426
1952.....	2,565	765	5,109	20,358	266,335	714,810	122,647	19,749	25,093	132,123	368	1,311,022
1953.....	2,719	760	6,014	21,296	309,064	857,117	122,370	21,957	30,846	133,295	493	1,505,931
1954.....	3,048	1,214	7,040	21,804	390,701	954,749	125,346	32,666	28,690	120,281	272	1,685,811
1955.....	3,977	1,637	7,982	28,080	390,502	1,102,183	92,514	32,667	29,463	148,809	..	1,837,814
1956.....	3,454	2,199	12,167	24,964	452,882	1,285,303	42,998	48,356	45,031	210,041	342	2,127,737
1957.....	10,629	1,585	11,493	35,004	438,331	1,268,616	41,646	77,808	55,238	227,533	298	2,168,181
1958.....	9,810	1,837	14,037	37,148	451,730	1,293,958	50,942	45,777	62,708	241,298	501	2,209,746

For the year 1958, Ontario, with 39.9 p.c. of the registrations of motor vehicles in Canada, had 58.6 p.c. of the total convictions for breaches of traffic regulations; Quebec in the same year had 20.2 p.c. of the registered vehicles and 20.4 p.c. of the convictions. In interpreting the figures in this way, however, it should be pointed out that traffic regulations are by no means uniform throughout Canada and no account is taken of the differences in the degree of urbanization in the provinces. These two provinces have large urban centres but in provinces with lower degrees of urbanization, such as the Atlantic Provinces, Saskatchewan and Alberta, convictions are lower when considered in proportion to the number of motor vehicles registered.

Convictions for Drunkenness and Offences against the Liquor Acts.—In considering these convictions it should be noted that the same person may and often does appear before the courts on such charges more than once within a year and that the number of convictions may thus be well above the number of persons convicted.

17.—Convictions for Drunkenness, by Province, 1949-58

NOTE.—See headnote to Table 14, p. 357.

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1949. ....	..	1,089	4,363	5,125	10,419	33,797	3,613	1,497	4,656	11,237	126	9	75,931
1950. ....	..	907	3,931	4,980	10,942	35,356	2,984	1,503	3,849	11,180	240	63	75,935
1951.	844	759	4,432	6,036	10,222	38,577	3,098	1,915	4,691	13,007	213	104	83,898
1952.	786	1,049	5,457	6,550	10,702	36,344	3,272	2,264	5,141	13,479	462	176	85,682
1953.	1,045	1,007	6,378	6,712	9,103	38,108	3,729	2,728	7,753	13,987	403	229	91,182
1954.	866	966	5,941	6,957	10,663	38,461	3,892	2,670	7,039	16,637	637	194	94,923
1955.	1,015	1,033	6,527	6,067	9,786	39,465	3,616	3,147	6,275	16,214	..	32	93,177
1956.	622	1,181	8,953	6,307	4,843	41,237	4,726	4,441	8,833	19,485	690	494	101,812
1957.	1,706	1,493	7,263	6,941	5,499	43,181	5,342	5,116	9,770	21,717	1,021	1,113	110,162
1958.	1,156	1,231	6,254	7,255	7,932	41,550	5,531	4,441	9,634	20,511	692	803	106,990

There is general interest in the relation of alcoholism to crime but, when examining statistics to support the assumption that some crimes are associated with the consumption of liquor, it should be observed that accurate interpretation would necessitate allowance for population variables such as age and sex distribution and other classifications according to social and economic status, etc.

18.—Convictions for Offences against the Liquor Acts, by Province, 1949-58

NOTE.—See headnote to Table 14, p. 357.

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1949. ....	..	439	2,053	1,278	1,969	14,339	1,574	2,418	3,081	1,098	—	10	28,259
1950. ....	..	268	2,192	1,172	3,121	15,761	1,980	2,478	3,504	1,164	64	34	31,738
1951.	371	266	2,273	818	1,467	14,104	1,961	2,005	3,757	1,251	88	44	28,405
1952.	475	284	2,236	1,172	777	15,050	2,314	2,527	6,782	1,351	243	94	33,335
1953.	441	280	2,124	1,221	1,304	17,137	2,013	3,146	5,445	1,508	285	68	34,972
1954.	411	368	2,285	979	1,203	18,351	2,501	3,484	5,313	1,557	251	38	36,741
1955.	571	464	2,056	1,014	1,322	18,256	2,102	3,480	5,579	1,545	..	2	36,391
1956.	431	472	2,027	1,032	2,783	22,430	2,886	4,539	6,867	2,628	116	79	46,290
1957.	546	467	1,893	1,661	1,670	22,527	4,513	4,286	8,961	2,622	62	72	49,280
1958.	583	522	2,049	2,322	3,206	24,052	4,097	3,210	9,281	2,576	122	137	52,157

Convictions of Females.—The number of convictions against females for summary conviction offences was greater in 1958 than in 1957 by 11.1 p.c. Prince Edward Island, Newfoundland, the Yukon and the Northwest Territories recorded decreases of 30.6 p.c., 7.2 p.c. and 6.3 p.c., respectively. Traffic offences were the cause of 86.7 p.c. of all summary convictions against women in 1958; such convictions rose by 13.9 p.c. as compared with 1957.

19.—Convictions of Females for Summary Conviction Offences, by Province, 1954-58

Province or Territory	Numbers of Convictions					Percentages of Convictions of Females to Total Convictions				
	1954	1955	1956	1957	1958	1954	1955	1956	1957	1958
Newfoundland.....	241	550	487	1,054	978	3.4	6.4	7.1	6.8	6.9
Prince Edward Island....	46	46	103	72	50	1.6	1.3	2.3	1.8	1.2
Nova Scotia.....	469	438	873	506	595	2.6	2.3	3.4	2.2	2.4
New Brunswick.....	586	439	554	583	693	1.7	1.2	1.6	1.3	1.4
Quebec.....	9,024	8,590	14,133	6,021	6,677	2.0	1.9	2.9	1.2	1.3
Ontario.....	63,384	77,321	88,237	91,649	95,499	5.9	6.3	6.3	6.6	6.8
Manitoba.....	4,309	4,853	2,367	2,568	3,316	3.0	4.4	4.2	4.3	4.9
Saskatchewan.....	641	847	1,850	1,372	1,733	1.4	1.8	2.9	1.3	2.9
Alberta.....	1,628	1,604	2,218	3,391	3,438	2.9	2.7	3.1	3.8	3.5
British Columbia.....	13,864	11,149	14,144	14,711	22,599	8.6	5.8	5.7	5.5	8.1
Yukon and N.W.T.....	186	9	234	364	341	10.2	19.6	10.0	10.6	10.5
Canada.....	94,378	105,846	125,200	122,291	135,919	4.8	4.9	5.2	5.0	5.4

Subsection 4.—Appeals

The disposition of appeals dealt with by the Supreme Court of Canada and the provincial supreme courts in criminal cases is shown by province for 1958 in Table 20; the disposition of those dealt with by county and district courts against summary convictions is given in Table 21.

20.—Appeals in Indictable Cases, by Province, 1958

Province or Court	Ap- peals Dis- posed of by Courts	Crown Appeal					Appeal of Accused					
		From Acquittal			From Sentence		From Conviction				From Sentence	
		Dis- missed	New Trial	Con- viction	Dis- missed	Varied	Dis- missed	Ac- quitted	New Trial	Sub- stitut- ed Ver- dict	Dis- missed	Varied
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	5	—	—	—	—	—	2	2	—	—	1	—
P. E. Island.....	5	—	—	—	—	—	1	1	—	1	—	2
Nova Scotia.....	17	2	—	—	—	—	6	2	1	—	2	4
New Brunswick.....	17	—	2	—	1	1	2	1	2	1	1	6
Quebec.....	94	2	2	—	—	—	46	18	8	1	9	7
Ontario.....	379	1	—	1	—	8	157	25	11	7	143	26
Manitoba.....	54	—	—	—	3	2	9	1	—	—	36	3
Saskatchewan.....	81	3	—	—	—	4	35	3	3	4	6	23
Alberta.....	344	2	1	4	11	6	32	30	14	1	165	78
British Columbia...	313	2	—	1	—	6	94	12	8	—	99	91
Supreme Court of Canada.....	4	1	—	1	—	—	2	—	—	—	—	—
Totals.....	1,313	13	5	8	15	27	386	95	47	15	462	240

21.—Appeals in Summary Conviction Cases, by Province, 1958

Province or Territory	Appeals Disposed of by Courts	Appeal of Informant				Appeal of Accused				
		From Acquittal		From Sentence		From Conviction			From Sentence	
		Dis-missed	Con-viction	Dis-missed	Varied	Dis-missed	Ac-quitted	Substi-tuted Verdict	Dis-missed	Varied
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	4	2	2	—	—	—	—	—	—	—
P. E. Island.....	15	—	1	—	—	6	4	4	—	—
Nova Scotia.....	109	14	9	2	—	47	27	—	7	3
New Brunswick.....	21	1	5	—	—	10	1	2	1	1
Quebec.....	122	—	5	4	5	52	21	1	4	30
Ontario.....	382	6	14	—	1	195	102	16	10	38
Manitoba.....	6	—	—	—	—	5	—	—	1	—
Saskatchewan.....	41	6	1	—	—	11	16	2	2	3
Alberta.....	165	12	5	2	1	60	59	5	9	12
British Columbia.....	212	7	10	5	1	82	77	4	2	21
Yukon Territory.....	24	4	4	—	—	9	4	2	—	1
Totals.....	1,101	52	56	13	8	477	311	36	36	112

Section 3.—Juvenile Delinquents

The Juvenile Delinquents Act defines a child as "any boy or girl apparently or actually under the age of 16 years". Provision is made, however, by which the Governor General in Council may proclaim that in a province the definition of a child be a "person under the age of 18 years". This has been done in British Columbia, Manitoba and Quebec. Newfoundland considers a juvenile to be a girl or a boy of under 17 years of age. For uniformity the figures relating to juveniles compiled by the Dominion Bureau of Statistics refer to the younger ages of under 16 years only and deal primarily with cases disposed of by the courts.

The fact that juvenile court statistics furnish the most comprehensive figures collected on a country-wide basis makes it important that their possibilities and limitations be understood. This Section gives an account of juvenile delinquency in Canada from the viewpoint of legal action taken, for in the eyes of the law a *child is a delinquent only when he or she is adjudged before the court to have committed a delinquency*. To many people the term 'juvenile delinquent' has a broader interpretation but that adopted in this Section does not include those boys and girls whose misdemeanours have not been reported to the courts nor those given the necessary advice and aid from their parents, their school, the police or a child care agency. Moreover it does not include those cases that are handled unofficially by the court, where the judge or probation officer makes an adjustment without filing a legal record of the offence. There is a growing tendency toward following this practice and thus keeping children's names from court records.

These statistics represent cases of delinquency reported to the courts, from the most trivial infractions to the most serious—that of murder. The number of cases brought before the courts is influenced by such factors as personnel and facilities of the court, community interest in and understanding of the function of a juvenile court, and by variations in the policies of the courts in the disposition of cases. As more courts are established the additional returns may exaggerate an apparent increase in delinquency or may underestimate a decrease. In some communities the juvenile court is the only available agency to provide services to children; in others there are well established agencies serving children of which the juvenile court is only one.

It should be noted, too, that the total figures do not represent the actual number of children charged and found guilty but rather tend to exaggerate them, for a child referred to the court two or more times during the year for different delinquencies is counted as a different case each time (see p. 368). Neither do the figures represent the number of delinquencies committed by delinquents because when a child is charged with more than one delinquency at a hearing only the most serious delinquency is counted.

Reports of juvenile delinquents were received in 1958 from 147 of the 169 judicial districts. Nine of these had no cases to report. Separate reports were received in 1958 from 194 incorporated urban centres of 4,000 or more population.

Juveniles brought before the Courts.—The number of juveniles brought before the courts in 1958 was 13,134, an increase of 10.1 p.c. over 1957. Saskatchewan, Nova Scotia and New Brunswick showed the greatest percentage increases among the provinces.

22.—Juveniles brought before the Courts, by Province, 1954-58

Province or Territory	1954	1955	1956	1957	1958	Percentage Change, 1957-58
	No.	No.	No.	No.	No.	
Newfoundland.....	229	269	368	319	354	+11.0
Prince Edward Island.....	43	31	48	36	26	-27.8
Nova Scotia.....	650	576	524	581	780	+34.3
New Brunswick.....	235	210	319	341	453	+32.8
Quebec.....	1,229	1,323	1,634	2,436	2,434	- 0.1
Ontario.....	3,381	3,606	4,462	4,861	5,263	+ 8.3
Manitoba.....	422	465	676	792	891	+12.5
Saskatchewan.....	62	58	47	29	88	+203.4
Alberta.....	463	602	756	824	985	+19.5
British Columbia.....	1,037	1,058	1,475	1,705	1,850	+ 8.5
Yukon Territory.....	—	—	1	—	—	—
Northwest Territories.....	—	—	5	4	10	+150.0
Canada.....	7,751	8,187	10,315	11,928	13,134	+10.1

23.—Percentage Change in the Number of Boys and Girls brought before the Courts, 1949-58

Year	Percentage Change from Preceding Year			Percentage Change from 1948		
	Boys' Cases	Girls' Cases	All Cases	Boys' Cases	Girls' Cases	All Cases
1949.....	- 9.0	-24.0	-10.7	- 9.0	-24.0	-10.7
1950.....	+ 2.9	+11.8	+ 3.8	- 6.3	-15.1	- 7.3
1951 ¹	+ 3.9	- 5.3	+ 3.0	- 2.6	-19.6	- 4.5
1952.....	- 5.0	+ 4.5	- 4.1	- 7.5	-16.0	- 8.4
1953.....	+ 8.3	+11.0	+ 8.5	+ 0.2	- 6.7	- 0.6
1954.....	- 0.6	- 4.2	- 1.0	- 0.5	-10.7	- 1.6
1955.....	+ 3.3	+25.9	+ 5.6	+ 2.8	+12.5	+ 3.9
1956.....	+26.9	+19.4	+26.0	+30.5	+34.3	+30.9
1957.....	+14.9	+21.0	+15.6	+50.0	+62.5	+51.4
1958.....	+10.4	+ 8.3	+10.1	+65.5	+76.0	+66.7

¹ Newfoundland included from 1951.

Children Adjudged Delinquent.—Over a period of ten years it has been found that between 80 and 90 p.c. of the children brought before the courts each year have been adjudged delinquent. The number of delinquents in 1958 was 11,391, an increase of 17.7 p.c. over 1957. The major increases in 1958 were shown in Saskatchewan and Quebec.

24.—Juvenile Delinquents, by Province, 1949-58

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1949....	..	49	433	198	1,323	2,541	403	171	246	833	1	6,198
1950....	..	10	351	258	1,369	3,056	400	76	204	688	6	6,418
1951....	175	52	483	261	1,180	3,024	347	64	242	815	1	6,644
1952....	215	29	356	287	628	2,889	409	81	317	877	—	6,068
1953....	196	33	443	235	773	2,975	360	49	357	952	4	6,377
1954....	218	43	440	224	678	2,945	341	59	428	956	—	6,332
1955....	254	30	390	202	1,040	3,138	401	57	535	978	—	7,025
1956....	336	48	412	311	1,184	3,945	593	44	715	1,391	6	8,985
1957....	301	35	492	324	1,351	4,051	708	26	766	1,621	4	9,679
1958....	343	25	676	431	2,229	4,108	790	85	906	1,788	10	11,391

Delinquencies.—Thieving is the most prevalent delinquency among boys and, together with having in possession, was the reason for court appearance in 39.0 p.c. of all cases in 1958. Breaking and entering and robbery were committed by 21.9 p.c. of the delinquent boys and another 9.5 p.c. committed wilful acts in respect of certain property. Only 3.2 p.c. of the boys were guilty of delinquencies against the person and 58.6 p.c. of these were found guilty of common assault.

Incorrigibility (23.5 p.c.) and theft and having in possession (22.3 p.c.) were the complaints against 45.8 p.c. of the delinquent girls in 1958.

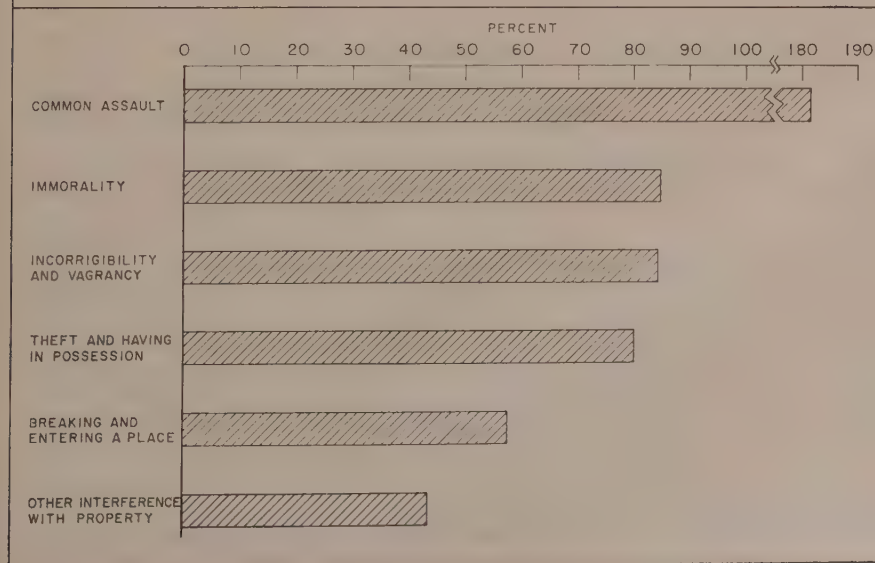
25.—Juvenile Delinquents by Group of Offence, and Ratio per 100,000 Population 7-16 Years of Age, 1949-58

Year	Delinquencies against the Person		Delinquencies against Property with Violence		Delinquencies against Property without Violence		Wilful and Forbidden Acts in respect of Certain Property		Forgery and Delinquencies relating to Currency		Other Delinquencies		Total Convictions	
	No.	Ratio to Population	No.	Ratio to Population	No.	Ratio to Population	No.	Ratio to Population	No.	Ratio to Population	No.	Ratio to Population	No.	Ratio to Population
1949.....	176	9	1,346	67	2,244	113	600	30	15	1	1,817	91	6,198	311
1950.....	151	7	1,337	65	2,394	116	667	32	16	1	1,853	90	6,418	311
1951.....	188	9	1,542	72	2,563	119	765	36	20	1	1,866	73	6,644	310
1952.....	172	8	1,456	65	2,496	112	633	28	25	1	1,286	58	6,068	272
1953.....	169	7	1,416	61	2,415	103	770	33	19	1	1,588	68	6,377	273
1954.....	184	7	1,444	59	2,489	102	673	28	32	1	1,510	62	6,332	259
1955.....	181	7	1,548	61	2,767	108	629	25	29	1	1,371	73	7,025	275
1956.....	250	9	1,838	69	3,572	131	839	31	39	1	2,397	88	8,985	329
1957.....	254	9	2,005	70	3,764	131	994	35	28	1	2,634	92	9,679	338
1958.....	346	12	2,268	76	4,436	148	985	33	36	1	3,320	111	11,391	381

¹ Newfoundland included from 1951.

26.—Juvenile Delinquents classified by Type of Delinquency, 1954-58

Delinquency	1954	1955	1956	1957	1958
	No.	No.	No.	No.	No.
Manslaughter and murder and causing death by criminal negligence.....	—	2	1	1	2
Murder, attempt.....	—	—	—	1	—
Rape and attempt, sexual intercourse and incest.....	—	3	4	5	6
Indecent assault (male and female).....	32	39	26	63	75
Assault, causing bodily harm and danger.....	24	12	49	38	17
Common assault.....	76	71	115	115	214
Interfering with transportation facilities.....	10	3	12	1	3
Other offences against the person.....	42	51	43	30	29
Breaking and entering a place.....	1,421	1,522	1,849	1,970	2,239
Robbery and extortion.....	23	26	39	35	29
Theft and having in possession.....	2,346	2,643	3,389	3,566	4,223
False pretences and fraud and corruption.....	20	26	14	24	19
Arson.....	26	15	33	83	58
Other interference with property.....	647	614	806	911	927
Forgery and delinquencies relating to currency.....	32	29	39	28	36
Incorrigibility and vagrancy.....	441	533	586	633	813
Immorality.....	137	223	211	197	253
Various other delinquencies.....	1,055	1,213	1,769	1,978	2,448
Totals.....	6,332	7,025	8,995	9,679	11,391

PERCENTAGE INCREASE IN JUVENILE DELINQUENCIES,
1958 OVER 1954

Sex and Age.—Juvenile delinquents are predominantly boys. The proportion for all offences in 1958 was approximately one girl to eight boys, a ratio that has remained much the same over a long period. Juveniles of 13 to 15 years of age comprised the majority of delinquents in 1958—76.7 p.c. of the boys and 88.1 p.c. of the girls. However, 312 boys and 15 girls (2.9 p.c. of the children) were under 10 years of age.

27.—Percentages of Delinquent Boys and Girls, by Age Group, 1957 and 1958

Age Group	1957			1958		
	Boys	Girls	Both Sexes	Boys	Girls	Both Sexes
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
7 - 12 years.....	24.0	12.0	22.6	23.0	11.6	21.7
13 - 15 years.....	75.8	88.0	77.3	76.7	88.1	78.0
Not given.....	0.2	—	0.1	0.3	0.3	0.3
Totals.....	100.0	100.0	100.0	100.0	100.0	100.0

Education and Employment.—Many causes contribute to backwardness in school work. The retarding influence may be illness, over-crowding in the home, disturbed family situations or dull mentality. Presuming that six years is the usual age for entering the first grade, 47.2 p.c. of the boys and girls in 1958 were reported to be two or more years below the normal grade for their age and 3.1 p.c. of the boys and girls were a year or more above it.

Nearly three-fifths (57.5 p.c.) of the boys and 47.6 p.c. of the girls had attained grade 7 at the time of delinquency. The majority of boys who had left school had reached grades 6 to 8 and the girls, grades 7 to 9. Some high school education had been achieved by 22.6 p.c. of the boys and girls.

28.—Age, Sex and School Grade of Delinquent Boys and Girls, 1958

(B=Boys; G=Girls)

Age	School Grades																Total Delinquents	
	Elementary										Secondary		Auxiliary		Not Given			
	1-4		5		6		7		8									
	B	G	B	G	B	G	B	G	B	G	B	G	B	G	B	G		
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.		
7 years.....	17	—	—	—	—	—	—	—	—	—	—	—	—	2	—	19	—	
8 ".....	74	2	1	—	—	—	—	—	—	—	—	—	—	7	—	82	2	
9 ".....	185	10	10	1	—	—	—	—	1	—	—	—	—	15	2	211	13	
10 ".....	255	6	96	6	17	3	3	—	2	—	—	—	2	—	21	1	396	16
11 ".....	214	9	200	14	145	7	31	3	2	—	3	—	4	—	27	5	626	38
12 ".....	163	12	218	19	293	21	217	28	31	2	1	—	8	—	46	4	977	86
13 ".....	95	12	173	18	304	20	446	64	315	65	51	9	15	7	68	9	1,467	204
14 ".....	85	10	133	14	269	44	592	87	662	133	541	104	37	5	118	20	2,437	417
15 ".....	98	11	149	18	308	53	591	95	897	117	1,471	216	42	13	253	31	3,809	554
Not given.....	1	—	—	—	3	—	3	—	2	—	—	—	—	—	24	4	33	4
Totals.....	1,187	72	980	90	1,339	148	1,883	277	1,912	317	2,067	329	103	25	581	76	10,057	1,334

In 1958, 11.0 p.c. of the delinquent boys and 14.1 p.c. of the delinquent girls were not attending school. At the time of leaving school their ages ranged from 8 to 15 years, the majority being 14 to 15 years. Of the delinquent boys who had left school, 43.1 p.c. were unemployed. The largest group of wage earners (103) were in occupations concerned

with transportation, such as messengers, helpers on milk delivery routes, truck drivers' assistants, etc. More than half of the girls were idle after leaving school. Factory work and domestic and personal services were the main occupations of those employed.

Birthplaces of Juvenile Delinquents and their Parents.—Canada was the country of birth of 92.4 p.c. of the juvenile delinquents in 1958 (the place of birth was not recorded in 1.5 p.c. of the cases); 6.0 p.c. were born in the British Isles, Europe, the United States, and Asia. Ontario was the province of residence of 50.1 p.c. of those born outside Canada.

Both parents of 74.2 p.c. of the delinquent children in 1958 were born in Canada and another 10.6 p.c. had one parent born in this country. To evaluate these figures, comparison should be made of the population ratio of children from 7-15 years of age whose parents were Canadian-born with those whose parents were born elsewhere.

Home Circumstances.—The type of home in which he lives and the amount and quality of supervision he receives are important factors in a child's behaviour. The statistics of the marital status of the parents and the place and type of residence of the child reflect home conditions and are worth recording as possible reasons for social or emotional maladjustment. The parents of 76.1 p.c. of the delinquent children were reported to be living together in 1958 but a home broken by separated parents, divorce or death was the background of 19.6 p.c. of the delinquent boys and girls. The mothers of 12.3 p.c. of the juvenile delinquents were employed other than in the home and the mothers of another 2.2 p.c. were dead. The fathers in 6.5 p.c. of the cases were deceased. Of every five juveniles who appeared in court, four were urban residents; 90.9 p.c. were living in their own homes at the time they got into difficulties; 4.0 p.c. of them were in foster homes, with either a relative or some other person; and institutions were the homes of 1.6 p.c. of them.

Sources of Complaint.—The police were the complainants in the majority of juvenile cases, 83.6 p.c. of the boys having been charged by them. Probation officers and parents were responsible for 4.5 p.c. and 3.5 p.c., respectively, of those charged. School authorities referred 1.8 p.c. of the boys to the courts and social agencies another 0.7 p.c.

The proportion (61.7 p.c.) of girls charged by the police was considerably less than the proportion of boys so charged. Parents made more use of the courts for girls than for boys (17.4 p.c.). School authorities laid complaints in 4.6 p.c., probation officers in 6.3 p.c. and social agencies in 3.6 p.c. of the girls' cases.

Disposition of Cases.—In 1958, 39.2 p.c. of the children's cases were heard within four days of the charge and 58.9 p.c. within nine days. However, 11.0 p.c. of them had to wait at least two weeks and 10.6 p.c. waited a month or more before the first hearing. These waiting periods may be explained in various ways.

Some county courts sit only twice or even once a month. Hearings may be deferred because of sickness in the family, school examinations, stormy weather or long distances. The chief cause for delay, however, is the time it takes to investigate the facts properly. The probation officer, and frequently there is only one to a court, has to find out what occurred at the time of the delinquency; he must get in touch with the parents and the school, learn something of the home situation, perhaps arrange medical or psychiatric examinations and explore community resources. The disadvantage of a long waiting period is outweighed by the assistance the court receives in deciding the form of treatment best suited to the child's needs and the type of care that will be the most economical for the community. For these intervening days or weeks most children are left in their own homes while a minority are placed in detention homes and, in the long run, whether the effect of the waiting period is good or bad is determined by the care given the youngster during that time.

Juvenile court judges heard 94.4 p.c. and magistrates 5.5 p.c. of the juvenile cases before the courts. The remainder were heard by justices of the peace. The proportion of those declared delinquent (96.1 p.c.) in the magistrates' courts was greater than in the juvenile courts (86.2 p.c.). In the former courts 3.3 p.c. of the cases were dismissed while in the juvenile courts only 3.1 p.c. were dismissed but 10.7 p.c. were adjourned *sine die*.

Some courts consider children whose hearings are adjourned *sine die* as delinquent while others do not but, for the sake of uniformity, the latter point of view is maintained by the Dominion Bureau of Statistics. In assessing the total problem of juvenile delinquency, however, cases adjourned *sine die* have to be taken into account for, when the proportion of cases dealt with in this way increases, the proportion of those declared delinquent declines.

29.—Juveniles before the Courts, Dismissed and Delinquent, 1954-58

Item	1954		1955		1956		1957		1958	
	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.
Before the Courts.....	7,751	100.0	8,187	100.0	10,315	100.0	11,928	100.0	13,134	100.0
Dismissed.....	237	3.1	207	2.5	221	2.1	331	2.8	416	3.2
Adjourned <i>sine die</i>	1,182	15.2	955	11.7	1,109	10.8	1,918	16.1	1,327	10.1
Delinquent.....	6,332	81.7	7,025	85.8	8,985	87.1	9,679	81.1	11,391	86.7

Sentences for delinquent boys usually differ somewhat from those for girls. In 1958 the proportion of boys put on probation was 52.7 p.c. and of girls 54.0 p.c. Fines or restitution were meted out to 15.3 p.c. of the boys but to only 6.1 p.c. of the girls. This is because damage to property, for which restitution seems a reasonable adjustment, is committed relatively more often by boys than by girls. A much larger proportion of girls (28.2 p.c.) than boys (14.4 p.c.) were sent to training schools. Final disposition of case was postponed for 7.0 p.c. of the girls and 13.0 p.c. of the boys were given suspended sentences.

30.—Disposition of Delinquents, by Type of Sentence, 1949-58

Year	Reprimanded		Probation of Court		Protection of Parents		Fined or Made Restitution		Detained Indefinitely		Sent to Training School		Final Disposition Suspended		Corporal Punishment		Mental Hospital	
	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.	No.	p.c.
1949.....	196	3.2	2,141	34.5	98	1.6	1,655	26.7	39	0.6	1,036	16.7	1,029	16.6	4	0.1	..	..
1950.....	354	5.5	2,392	37.3	94	1.4	1,148	17.9	26	0.4	1,144	17.8	1,257	19.6	3	0.1	..	..
1951 ¹	309	4.6	2,313	34.8	154	2.3	1,433	21.6	45	0.7	1,141	17.2	1,247	18.7	2	0.1	..	..
1952.....	243	4.0	2,412	39.8	148	2.4	1,015	16.7	1	--	1,152	19.0	1,095	18.1	2	--	..	..
1953.....	227	3.6	2,620	41.1	186	2.9	1,147	18.0	28	0.4	1,107	17.4	1,062	16.6	—	—	..	..
1954.....	199	3.1	2,595	41.0	174	2.8	1,095	17.3	27	0.4	1,121	17.7	1,119	17.7	2	--	..	..
1955.....	181	2.6	3,067	43.7	365	5.2	1,064	15.1	50	0.7	1,180	16.8	1,113	15.9	—	—	..	..
1956.....	359	4.0	3,155	35.1	404	4.5	2,015	22.4	30	0.3	1,440	16.0	1,577	17.6	—	—	5	0.1
1957.....	460	4.7	3,822	39.5	300	3.1	2,261	23.4	63	0.7	1,563	16.1	1,202	12.4	1	--	7	0.1
1958.....	504	4.4	5,728	50.3	294	2.6	1,624	14.3	13	0.1	1,822	16.0	1,389	12.2	3	--	14	0.1

¹ Newfoundland included from 1951.

Actual Number of Delinquent Children.—As stated in the introduction to this Section, the figures in the foregoing tables do not represent the actual number of children charged and found guilty, since a child referred to the court more than once in a year is counted as a separate case each time. Thus the 13,134 appearances before the court in 1958 (Table 22), which resulted in 11,391 delinquencies (Table 24), involved 10,307 children. Of these 10,307 children, 9,404 were found delinquent on one occasion during the year, as shown in Table 31, but 1,340 of these 9,404 were reported as having been found delinquent one or more times in previous years.

31.—Total Delinquent Children, by Number of Delinquent Appearances, 1958, with Number of Appearances in Previous Years

Number of Delinquent Appearances	Total Delinquent Children	Delinquent Appearances in Previous Years											
		0	1 or More	1	2	3	4	5	6	7	8	9	10+
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1 or more.....	10,307	8,642	1,665	988	362	156	66	41	15	15	5	3	14
1.....	9,404	8,064	1,340	809	286	125	47	32	10	13	4	2	12
2.....	764	509	255	148	59	22	15	4	4	1	—	1	1
3.....	108	58	50	24	10	6	3	5	—	—	1	—	1
4.....	22	7	15	5	5	3	1	—	1	—	—	—	—
5.....	6	3	3	1	1	—	—	—	—	1	—	—	—
6.....	1	1	—	—	—	—	—	—	—	—	—	—	—
7.....	2	—	2	1	1	—	—	—	—	—	—	—	—

Section 4.—Penal Institutions and Training Schools

Penal institutions may be classified under three headings: (1) penitentiaries, where prisoners have long sentences and the turnover is slow; (2) reformatories, where the turnover is also rather slow; and (3) common gaols, where the turnover is extremely rapid.

If the average of the figures for inmates at the beginning and at the end of the year be considered the average population for the year, and the number of discharged as the turnover, the turnover in the years 1957 and 1958 was: in penitentiaries, 56 and 64 p.c.; in reformatories, 362 and 352 p.c.; and in gaols, no less than 1,833 and 1,927 p.c., respectively.

32.—Movement of Population in Penitentiaries, Reformatories and Gaols, 1954-58

Type of Institution and Item	1954	1955	1956	1957	1958
	No.	No.	No.	No.	No.
Penitentiaries—					
Inmates in custody at beginning of year.....	4,934	5,120	5,507	5,508	5,432
Admitted during the year.....	3,275	3,096	3,112	2,977	3,919
Discharged during the year.....	3,089	2,709	3,112	3,053	3,582
In custody at end of year.....	5,120	5,507	5,508	5,432	5,770
Reformatories for Men—					
Inmates in custody at beginning of year.....	2,818	2,906	2,990	2,924	3,257
Admitted during the year.....	10,081	10,804	10,964	11,532	13,220
Discharged during the year.....	9,993	10,720	11,030	11,199 ^r	12,587
In custody at end of year.....	2,906	2,990	2,924	3,257 ^r	3,890
Reformatories for Women—					
Inmates in custody at beginning of year.....	160	155	165	168	145
Admitted during the year.....	591	622	630	541	560
Discharged during the year.....	603	612	627	564	541
In custody at end of year.....	148	165	168	145	164
Common Gaols—					
Inmates in custody at beginning of year.....	5,779	6,279	6,391	5,902 ^r	6,337
Admitted during the year.....	100,519	108,661	106,563	112,610	130,669
Discharged during the year.....	100,019	108,549	107,052 ^r	112,175 ^r	129,868
In custody at end of year.....	6,279	6,391	5,902 ^r	6,337 ^r	7,138
Totals—					
Inmates in custody at beginning of year...	13,691	14,460	15,053	14,502 ^r	15,171
Admitted during the year.....	114,466	123,183	121,269	127,660	148,368
Discharged during the year.....	113,704	122,590	121,822	126,991 ^r	146,578
In custody at end of year.....	14,453	15,053	14,501	15,171 ^r	16,962

Subsection 1.—Penitentiaries*

The penitentiaries of Canada are administered by the Commissioner of Penitentiaries, responsible directly to the Minister of Justice. The system comprises:—

- (1) Six primary institutions, which receive inmates sentenced by the courts to imprisonment for terms of two years up to life. These are located at New Westminster, B.C.; Prince Albert, Sask.; Stony Mountain, Man.; Kingston, Ont.; St. Vincent de Paul, Que.; and Dorchester, N.B. Persons sentenced to penitentiary terms in Newfoundland are cared for in a provincially operated institution at St. John's, Nfld., under financial arrangements authorized by Sect. 82 of the Penitentiary Act.
- (2) Four secondary institutions, to which inmates are transferred from the primary 'receiving' institutions on the basis of their suitability for special forms of treatment, including vocational training. Two of these (Collin's Bay Penitentiary and the Joyceville Institution) are within a few miles of Kingston. The Federal Training Centre and the soon-to-be-opened Leclerc Institution are in close proximity to St. Vincent de Paul Penitentiary.
- (3) Three 'satellite' work-camps, at William Head, B.C., Valleyfield, Que., and Springhill, N.S., operated as extensions of the primary institutions in their respective areas.
- (4) A Prison for Women, operated as a detached portion of Kingston Penitentiary, to which female inmates are transferred upon committal to penitentiary in any part of Canada.
- (5) A Penitentiary Staff College at Kingston for the training of groups of penitentiary officers from all institutions through the media of regular and special courses and conferences.

During the year ended Mar. 31, 1959, the average daily population of the penitentiaries was 5,935 and the total net cash outlay for maintenance was \$11,714,296 or \$5.41 per inmate per day.

Since the proclamation of the Penitentiary Act on Sept. 1, 1947, many of the recommendations of the Royal (Archambault) Commission (1938) have been carried out. The recommendations of the (Fauteux) Remission Service Committee (1956) inspired the establishment of a National Parole Board (see p. 371) and have, in addition, given rise to federal-provincial discussions on the advisability of extending the sphere of federal penitentiary responsibility to persons sentenced to shorter terms of imprisonment. In 1958 the Minister of Justice appointed a Correctional Planning Committee for the purpose of exploring the implications of that proposal and of considering other ways in which a more effective and more fully integrated Canadian correctional system could be achieved. Recent innovations, notably the establishment of work-camps for the care and training of selected inmates, have been made in the light of the Planning Committee's study and suggestions. Other aspects of its report are under consideration by the Federal Government.

* Prepared under the direction of R. B. Gibson, Commissioner of Penitentiaries.

33.—Movement of Convicts in Penitentiaries, Years Ended Mar. 31, 1954-58

Item	1954	1955	1956	1957	1958
	No.	No.	No.	No.	No.
In Custody, Apr. 1.....	4,934	5,120	5,507	5,508	5,433
Received—					
From gaols.....	2,434	2,378	2,384	2,275	2,934
By transfer.....	827	708	706	668	944
By cancellation of ticket-of-leave.....	14	10	22	34	41
Totals, Received.....	3,275	3,096	3,112	2,977	3,919
Discharged by—					
Expiry of sentence.....	1,810	1,456	1,572	1,663	1,974
Transfer.....	826	708	706	669	944
Ticket-of-leave.....	384	449	723	637	577
Death.....	21	16	17	20	24
Pardon.....	36	66	70	47	40
Release on order of court.....	12	9	14	9	13
Other reason.....	—	5	10	8	10
Totals, Discharged.....	3,089	2,709	3,112	3,053	3,582
In Custody, Mar. 31.....	5,120	5,507	5,508¹	5,433¹	5,770

¹ Includes one inmate confined in a mental hospital.

34.—Summary Statistics re Convicts in Penitentiaries, as at Mar. 31, 1954-58

Item	1954	1955	1956	1957	1958
	No.	No.	No.	No.	No.
Country of Birth—					
Canada.....	4,712	5,123	5,157	5,123	5,412
British Isles and possessions.....	138	134	118	99	115
Austria and Hungary.....	14	13	17	20	34
Italy.....	9	7	10	13	11
Poland.....	29	33	37	31	25
U.S.S.R.....	24	24	15	23	16
Other European.....	84	67	49	38	51
United States.....	90	99	86	68	84
Other countries.....	20	7	19	18	22
Marital Status—					
Single.....	3,017	3,357	3,325	3,307	3,503
Married.....	1,592	1,663	1,601	1,527	1,633
Widowed.....	132	143	156	157	158
Divorced.....	131	130	141	141	150
Separated.....	248	274	285	301	326
Sex—					
Male.....	5,025	5,412	5,426	5,347	5,682
Female.....	95	95	82	86	88
Age—					
Under 21 years.....	639	694	669	703	815
21 to 29 ".....	2,192	2,299	2,217	2,091	2,225
30 to 39 ".....	1,364	1,467	1,546	1,521	1,622
40 to 49 ".....	597	701	698	742	736
50 to 59 ".....	213	232	259	268	266
Over 60 ".....	115	114	119	108	106
Totals.....	5,120	5,507	5,508	5,433	5,770

The National Parole System.*—The progressive correctional system now in operation in Canada places emphasis on reformation rather than on punishment alone for the sake of retribution to society. It is quite obvious from past experience and from the high rate of recidivism among criminals that punishing a person for wrong-doing merely by depriving him of his freedom is not effective in turning that person from crime. It is therefore considered imperative that during his period of incarceration every possible means be taken to reform the inmate through treatment and training and through assistance with his personal problems. Not only is it highly desirable that the individual be given such assistance and returned to freedom as a useful citizen but it is also undoubtedly preferable for society generally that he be saved from the further resentment and bitterness that would result from imprisonment without assistance. The only way the public can be properly protected is by reforming the offender. Thus the treatment and training program in the institution is a vital part of the whole correctional process and parole is an extension of that training outside the institution.

In January 1959, the National Parole Board, consisting of a chairman and three members, was formed and given absolute jurisdiction over all matters of parole. It operates under authority of the Parole Act (SC 1958, c. 38) which came into force on Feb. 15, 1959, replacing the former Ticket-of-Leave Act administered by the Remission Service of the Department of Justice. The Board has taken over the Remission Service, and the staff of the Board, numbering 82 persons, is now known as the National Parole Service.

The basic purpose of parole is to reform and rehabilitate the offender and the function of the National Parole Board is to select those inmates in the various federal and provincial penal institutions who indicate that they sincerely intend to reform, and to assist them in doing so by grant of parole. The Board is not a reviewing authority and is not concerned with the propriety of conviction or the length of sentence but only with the

* Prepared by T. G. Street, Chairman, National Parole Board, Ottawa.

problem of deciding, in each case it considers, whether or not there is a reasonable chance of reformation. Parole should not be confused with clemency and is not granted on humanitarian grounds alone. It is not a matter of shortening sentence, although it has the effect of shortening the time a man spends in gaol. Parole means that an inmate is allowed to serve the remainder of his sentence at large in society but under certain restrictions that will ensure his leading a law-abiding life. These restrictions are designed for the protection of the public and for his own welfare.

The decision of the Board is based on reports it receives from the police, from the trial judge or magistrate and from various people at the institution who deal with the inmate. Reports are also obtained from a psychologist or psychiatrist, when available. Where necessary a community investigation is conducted to secure as much information as possible about the man's family and background, his work record, and his position in the community. From all these reports, an assessment is made to determine whether or not he has changed his attitude and is likely to lead a law-abiding life. An inmate need not obtain the services of a lawyer to apply for parole. He may apply by sending a letter to the Board and is assisted in preparing such application at the institution, or another person may apply on his behalf. The Board automatically reviews all sentences of over two years. As soon as an application is received, a file is opened and investigation begun, the results of which are presented to the Board for decision. All applications and reports are processed by the Parole Board staff at Ottawa. In addition to the headquarters staff, there are nine Regional Officers stationed across the country. They interview all applicants for parole to give them an opportunity of making verbal representations to a representative of the Board. The Regional Officers also submit to the Board a report of the interview and their assessment of the inmate's suitability for parole. These Regional Officers have authority over the parolees in their various areas, and also give information and counsel to all inmates regarding possibility of parole and preparation for it.

A person on parole is under the care of a supervisor, usually an after-care agency worker or a probation officer, who reports to the Regional Officer. If he violates the conditions of his parole or commits further offence or misbehaves in any manner, the Board may revoke his parole and return him to the institution to serve that part of his sentence outstanding at the time his parole was granted.

The inmate coming out of an institution faces many problems in regaining his place in society. He is assisted as much as possible by the members of the Parole Service, the after-care agencies and the provincial probation officers. But the success of the parole system depends on the public's understanding of the purpose of parole and its sympathy toward the problems of the ex-inmate. If he is unable to get a job or form new associations because of his past, the chances of his being rehabilitated are remote. However, with the increasing efficiency of the system, with greater co-operation and understanding among all people involved in the correction system and with the public generally, recidivism in Canada should be lessened and some of the problems of criminality solved.

Subsection 2.—Reformatories and Other Corrective Institutions

The latest information on reformatories and corrective institutions is that made available by the 1951 Census. Summary data only are given here.

As of June 1, 1951, there were 13 reformatory and corrective institutions, four of which were for women. Enumeration cards were completed for 2,551 men and 141 women on June 1, 1951. In these institutions for adults 29 p.c. of the inmates were under 21 years of age at the time of admission and almost 50 p.c. were between the ages of 21 and 39 years. The proportion of single men was 63 p.c. and three out of four of the men whose residence was known lived in urban centres. More than one-half of the women (53.2 p.c.) were single and the majority (91.0 p.c.) of those whose residence was known lived in urban centres. From five to eight years of elementary school education were recorded for about

one-half of the male and female inmates. Only 6.7 p.c. of the men were unemployed at the time of admission. On the other hand, 20.6 p.c. of the women were unemployed and another 34.0 p.c. had never worked.

The revenue for the support of the institutions for men was derived chiefly from provincial funds (56.0 p.c.) and from the sale by the institutions of farm and industrial products (41.3 p.c.). To support the institutions for women, income was received from provincial funds (31.0 p.c.), municipalities (1.8 p.c.), sale of products (53.4 p.c.), donations and bequests (4.6 p.c.) and other sources (9.2 p.c.).

Summary statistics of inmates, movement of population, terms of sentence and penal record of inmates are given in the 1954 Year Book, pp. 311-313.

Subsection 3.—Training Schools

Reports on movement of population are received yearly from training schools and figures compiled therefrom are shown in Table 35 for the years 1954 to 1958.

35.—Movement of Population in Training Schools, Years Ended Mar. 31, 1954-58

Item	1954	1955	1956	1957	1958
	No.	No.	No.	No.	No.
Training Schools for Boys—					
Pupils in residence at beginning of year.....	1,833	1,977	1,988	1,938	2,132
Admitted during the year.....	1,811	2,079	1,875	2,395	2,730
Discharged during the year.....	1,667	1,988	1,925	2,201	2,528
In residence at end of year.....	1,977	2,068	1,938	2,132	2,334
Training Schools for Girls—					
Pupils in residence at beginning of year.....	859	928 ¹	928 ²	926	1,096 ^{3,4}
Admitted during the year.....	781	767	803	737	1,095 ⁴
Discharged during the year.....	705	774	805	665	1,093 ⁴
In residence at end of year.....	935	921	926	998	1,086 ⁴
Totals—					
Pupils in residence at beginning of year....	2,692	2,905 ¹	2,916 ²	2,864	3,228 ^{3,4}
Admitted during the year.....	2,592	2,846	2,675	3,132	3,825 ⁴
Discharged during the year.....	2,372	2,762	2,730	2,866	3,621 ⁴
In residence at end of year.....	2,912	2,989	2,864	3,130	3,426 ⁴

¹ The discrepancy between pupils in residence at end of year 1954 and those in residence at beginning of 1955 comes from the inclusion of seven adults in Home of the Good Shepherd, Saint John, N.B. ² The discrepancy between 1955 and 1956 comes from closing of St. Patrick's Home, Halifax, N.S. ³ The discrepancy between pupils in residence at end of year 1957 and those in residence at beginning of 1958, comes from the inclusion of 98 pupils in Good Shepherd Home, Edmonton, Alta. ⁴ The discrepancy of 12 pupils comes from the omission of Girls' Home and Training School, St. John's, Nfld.; this institution did not forward a return in 1958.

More detailed information on training schools is collected at each decennial census. Statistics compiled from the Census of 1951 are summarized in the 1954 Year Book, pp. 314-316.

Section 5.—Police Forces

The Police Forces operating in Canada are organized under three groups: (1) the Federal Force, which is the Royal Canadian Mounted Police whose operations cover a very wide field in addition to purely police work; (2) Provincial Police Forces—the Provinces of Ontario and Quebec have organized their own Provincial Forces, but the other provinces engage the services of the Royal Canadian Mounted Police to perform parallel functions within their boundaries; (3) Municipal Police—every urban centre of reasonable size has its own police organization which is paid for by the local taxpayers and which attends to police matters within the borders of the municipality concerned.

Municipal police statistics are at present undergoing revision and are therefore not carried in this edition of the Year Book.

Subsection 1.—The Royal Canadian Mounted Police*

The Royal Canadian Mounted Police is a Civil Force maintained by the Federal Government. It was organized in 1873 as the North West Mounted Police, with duties confined to what was then known as the North West Territories. By 1904 the work of the Force received signal recognition when the prefix "Royal" was bestowed upon it by His Majesty King Edward VII. In 1905 when Alberta and Saskatchewan were constituted provinces an arrangement was made whereby the Force continued to discharge its duties as formerly, each province making a contribution towards defraying the cost. This arrangement was continued until 1917.

In 1918 the Royal North West Mounted Police was assigned the duty of enforcing Dominion legislation for the whole of Canada west of Port Arthur and Fort William. Soon after the end of World War I an extension of governmental activities made it obvious that the enforcement of Dominion statutes throughout Canada must be the responsibility of a Dominion Force and therefore the jurisdiction of the Royal North West Mounted Police was extended to the whole of Canada early in 1920. In that year the name of the Force was changed to the Royal Canadian Mounted Police and the former Dominion Police with Headquarters at Ottawa, whose duties were largely connected with guarding public buildings in that city and Canadian Government dockyards at Halifax, N.S., and Esquimalt, B.C., was absorbed by the Royal Canadian Mounted Police.

The Force is controlled and administered by a Minister of the Crown (the Minister of Justice). Its Commissioner has the rank and status of a Deputy Minister. Officers are commissioned by the Crown and are selected from serving non-commissioned officers. The Force is divided into 17 Divisions, with 622 detachments distributed over the entire country. Land transportation facilities consist of 1,473 motor vehicles, most of which are fitted with two-way radio sets connecting with wireless stations operated by the Force in both Eastern and Western Canada, including the Quebec-United States boundary area. The Air Division of the Force operates 16 aircraft of various types. The strength of the Force at the end of 1959 was 5,382 officers and men, with a reserve strength of 246. The reserve strength is located chiefly in the larger cities where men can be congregated easily and where instruction can be given in the evenings. The Marine Division, with a strength of about 250 officers and men, operates 70 ships of various kinds, the majority of which are located on the Atlantic and Pacific Coasts and on the Great Lakes. The Personnel Branch of the Force has officers in each Division across the country. Great care is taken in the selection of recruits.

The Royal Canadian Mounted Police is responsible for enforcing federal laws throughout Canada and is specially empowered to deal with infractions against smuggling by sea, land and air. It also enforces the provisions of the Excise Act and is responsible for the suppression of traffic in narcotic drugs. In all, the Force has responsibility in over fifty Federal Government Acts, including the Indian Act. It also assists many departments of the Federal Government in administrative duties and is responsible for the protection of government buildings and property. It is the only police force operating in the Yukon and Northwest Territories. Furthermore it undertakes intelligence and security services for the Federal Government. In addition, agreements have been made with the Provinces of Alberta, Saskatchewan, Manitoba, Nova Scotia, New Brunswick, Prince Edward Island, Newfoundland and British Columbia whereby the services of the Royal Canadian Mounted Police may be secured to enforce provincial laws and the Criminal Code in rural districts upon payment for such services. The agreement with Saskatchewan has been in existence since 1928 and those with the Provinces of Alberta, Manitoba, New Brunswick, Nova Scotia and Prince Edward Island since 1932. The agreements were entered into with the Provinces of Newfoundland and British Columbia in August 1950, and the police forces of those provinces were absorbed by the Royal Canadian Mounted Police. The Force has agreements also for policing 118 district municipalities, cities and towns.

* Revised by the Commissioner of the Royal Canadian Mounted Police, Ottawa.

The services of Royal Canadian Mounted Police experts in fingerprints, crime-index information, examination of firearms and questioned documents are available to all other police forces in Canada. A *Police Gazette*, issued monthly and containing instructional articles on police work as well as the latest information on wanted or missing persons, is sent to all police forces across the country. The Force has two Police Colleges that are open to selected personnel from other police forces in Canada and to a more limited number of police personnel from outside the country.

A special article appears in the 1957-58 Year Book entitled "The Philosophy of the Royal Canadian Mounted Police".

Subsection 2.—Provincial Police Forces*

Quebec Provincial Police Force.—This Force is responsible for upholding law and order over the whole territory of the province, from the provincial boundary between Ontario and Quebec to the Magdalen Islands in the Gulf of St. Lawrence. The Force is composed of about 1,600 men under the orders of a Director, who is responsible to the Attorney General of the province.

To facilitate operations, the territory is divided into two almost equal parts designated as the District of Montreal and the District of Quebec. The Director has his office in Montreal, with a Deputy Director in Quebec City. There is an Assistant to the Director in Montreal and one in Quebec.

Working under the Assistant Directors for the Montreal and Quebec Districts are the following: an Inspector General; an Inspector (Detective Branch); an Inspector (Traffic Branch); and an Inspector (Constabulary). Each of these three sections (Detective, Traffic, Constabulary) is under a captain supported by a number of lieutenants and sergeants.

There are 40 Outpost Detachments in the Montreal District and 18 in the Quebec District.

Ontario Provincial Police.—The Ontario Provincial Police Force is maintained by the Ontario Government and administered by the Attorney General's Department. It is responsible for law enforcement in the rural and unorganized parts of the province and in certain municipalities by contract. The development of the Force from its beginning in the early years of Confederation to the passing of the Police Act in 1946 is outlined in the 1950 Year Book, pp. 332-333.

The Force, with a strength of approximately 1,860 in 1959, consists of a General Headquarters at Toronto and 17 District Headquarters at Chatham, London, Dundas, Niagara Falls, Toronto, Mount Forest, Barrie, Peterborough, Belleville, Perth, Cornwall, North Bay, Sudbury, Sault Ste. Marie, Timmins, Port Arthur and Kenora. Each District has detachments adequate to meet local law-enforcement requirements. A Criminal Investigations Branch, under the command of an Assistant Commissioner, is maintained at Toronto to handle crimes of a major nature.

The Force operates one of the largest frequency-modulation radio networks in the world, which is a most efficient method of combating every type of lawlessness. The network includes 66 fixed stations—48 60-watt stations and 18 250-watt stations, one of which is dual-controlled—and 582 radio-equipped mobile units including five boats operating on Lake Temagami, Lake Simcoe, Lake Nipissing, Lake of the Woods and Georgian Bay.

In 1959, the Ontario Provincial Police Force policed 55 municipalities which requested this service under the provisions of the Police Act.

* Revised by Geo. A. Shea, O.B.E., Secretary-Treasurer, Canadian Association of Chiefs of Police, Montreal.

CHAPTER VIII.—EDUCATION AND RESEARCH

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NOTE.—The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

PART I.—FORMAL EDUCATION*

Section 1.—Education in the Provinces and Territories

Education in Canada has been moulded according to certain principles and practices which should be appreciated if the present education system is to be understood. First, on entering the Canadian federation, each province retained responsibility for exercising control of formal education within its own borders, a right as jealously guarded today as at that time. Second, there has been a division of responsibility from then on between the provincial departments of education and the local boards which operate under provincial school law and school regulations. Third, the Canadian people believe in education for all youth, as evidenced by the fact that much effort has been directed toward equalizing educational opportunity from elementary through secondary and higher education. Fourth, it is also recognized by Canadians that a high general education level on a broad front is necessary to safeguard their democratic way of life, to appreciate and exploit their natural resources to the full, and to assume their responsibilities in international fields.

Interest of the Federal Government in Education.—The Federal Government retains responsibility for the education of Indians and Eskimos, other children in the territories outside the provinces, inmates of provincial penitentiaries and members of the Armed Forces and their families living on military stations or overseas, although provincial educational facilities are utilized whenever possible.

* Information supplied by the Education Division, Dominion Bureau of Statistics.

Education of Indian children in Canada is a function of the Indian Affairs Branch of the Department of Citizenship and Immigration. Residential schools are provided for orphans, children from broken homes, and children of isolated families. Day schools are available for children living in communities and, where conditions are favourable, Indian children attend non-Indian schools. In addition, vocational and professional training is provided for Indian youths. (See also pp. 201-205.)

The provision of educational facilities for the nomadic Eskimo population, a responsibility of the Northern Administration Branch of the Department of Northern Affairs and National Resources, is a more difficult problem. There are now close to 50 schools established throughout the vast Northwest Territories at points scattered from the Mackenzie Delta to northern Quebec. Some of these are operated by religious missions assisted by government grants. All northerners attend the same schools, which range from the larger school at Yellowknife where a variety of vocational courses are given and where students may qualify for university entrance, to single classroom units in remote Eskimo settlements. Vocational training is considered so important for the Eskimo young people in certain areas that specially chosen groups are sent south to secure training in trades in which they may later find employment in their own communities. (See also pp. 205-210.)

Federal interest in education is also shown through grants to vocational education; grants to universities and colleges; grants for research and construction through the Canada Council; grants-in-aid for equipment and personnel to education institutions through the National Research Council, the Defence Research Board, the Department of National Health and Welfare and several other agencies of government. The Federal Government also assists formal and informal education at various levels through programs or materials provided by the National Film Board, the Canadian Broadcasting Corporation, the Department of National Health and Welfare, the Department of Agriculture, and so on. (See also p. 380.)

Administration and Organization of Education in the Provinces.—Because each of the ten provinces has the authority and responsibility for organizing its own system of education, with the legislature being responsible to the electorate for its decisions, there are in existence ten distinct provincial systems with differing policies, organizations and practices. Even so, in some respects a great deal of similarity has developed among the systems as a result of interchange of personnel and ideas, ease of transportation and communication, interprovincial and national education bodies, proximity, co-operation and emulation. Each province has established a department of education and, except in Quebec, each has a Cabinet Minister as Minister of Education. The Quebec department is administered by a Superintendent of Education—a non-political appointee—who maintains liaison with the Cabinet through the Minister of the Department of Youth; he is head of the Council of Education, composed of Roman Catholic and Protestant Committees which sit separately, each being responsible for the organization and discipline of its own public schools and teacher-training institutions, for conducting examinations for school inspectors, and for making recommendations to the Cabinet concerning school grants and certain specified appointments.

The provincial departments of education assist local boards in providing elementary and secondary schools and, in some cases, establish schools in isolated areas. In addition, they generally either establish schools for deaf and blind persons or make provision elsewhere for their education and also provide for the education of other atypical pupils. Teacher-training is conducted in provincial establishments or by arrangement with one or more universities, and trade schools or institutes are established by provincial departments where deemed expedient.

Local School Organization.—Authority has been delegated by the provincial departments of education to publicly elected or to appointed municipal boards, which function as corporations under the school Acts and regulations, and are held responsible to the provincial government and resident ratepayers for the operation of schools. Through such delegation of authority, publicly controlled education has become a provincial-local partnership with the degree of decentralization varying somewhat from province to province and from time to time. For example, matters concerning control of the curriculum, supervision and contributions of revenue to the boards are, and will continue to be, recurrent problems. Local boards may be elected, appointed or partly elected and partly appointed. They differ in number of members—usually three members for one-room rural districts but as many as five, seven or even twelve or more for urban units. Where larger units in rural areas have been established there are central boards for the unit representing the component districts, although there may be local boards which retain some custodial and advisory duties.

The larger unit replacing rural districts, which were usually about four miles in extent, was introduced by legislation in several provinces and made optional in others in an effort to provide better school facilities and greater equalization and to mitigate the problems caused by a chronic shortage of teachers. Larger units have been established by legislation in Alberta and British Columbia and by Acts with provision for local option in Saskatchewan and the Maritime Provinces. Southern Ontario has been gradually organizing its rural areas into county units; Manitoba has recently introduced legislation whereby communities will find it beneficial to form larger secondary units; and Protestant Quebec has been essentially organized into larger units. In Catholic Quebec one board of commissioners administers all Roman Catholic schools in a municipality, whether rural or urban. In that province there have always been more residential schools established by religious groups than elsewhere. In addition, the fact that Quebec has more than 100 vocational and agricultural schools has lessened the need for the composite type of school.

Larger units vary in organization. In some provinces the rural sections are formed into units of perhaps 80 or more rural schools; in others the towns and villages are included in the units, or may be included if they so desire; in still others secondary schools only are consolidated in the larger units. Usually each unit board is advised by a superintendent who maintains liaison with the department of education, and where units are headed by a professional educator there is a trend towards delegating more professional responsibilities to the unit board. In several provinces there remains the problem of making school administrative units and municipal units coterminous.

Each department of education, among its duties, undertakes to provide for the selection, training and certification of teacher candidates; to establish courses of study and prescribe school texts; to provide inspection services and liaison between the local boards and the department; to assist in financing the schools through grants and services; and to make rules and regulations for the guidance of trustees and teachers. In return, regular reports are required from the teachers and districts.

The first government grants were based on such factors as number of teachers, enrolment, days in session and attendance. Later, special grants were introduced in most provinces to meet a variety of expenses such as the erection of the first school and other construction, the organization of special classes, transportation for pupils, and school lunches. More recently, most provinces have made some provision for equalization grants and several have introduced a basic grant for operation supplemented by a limited number of special grants.

The public school system normally provides 12 or 13 years or grades, depending on the province. Common patterns for elementary and secondary levels are 8-4 or 8-5, 6-3-3 or 6-3-4, or 7-5. The trend is towards six elementary years with six or seven years of secondary schooling, following the practice of doing away with the one-room rural units through consolidation and the consolidation of small high schools. The generally accepted age of entrance to regular classes is now six years, although there has been an increased demand for kindergarten and nursery schools that has not been satisfied in many areas because of pressure for accommodation at the higher levels. Many private nursery schools and kindergartens have been established which have helped to ease the situation. The amount of supervision for these pre-school organizations varies widely from province to province but is usually minimal.

Parent-teacher and home and school organizations are numerous and active across Canada, giving community leadership in many areas connected with child instruction and welfare and working towards better schooling.

School Construction.—The development of larger school units and the consequent decrease in the number of one-room rural schools has tended to counterbalance the increase in the number of new schools erected to accommodate increased enrolment. Thus the total number of elementary and secondary schools has remained reasonably constant for some years although pupil accommodation has greatly increased year by year. At the higher education level, increased enrolment has resulted in an unprecedented expansion of facilities as well as in an upgrading of colleges into universities and in the establishment of new institutions. Planners and designers of new school buildings have paid greater attention to functional architecture, to the use of modern light-weight materials and to equipment possibilities. Gone are basements, towers, expensive trim and waste space, but more expensive heating, plumbing and ventilation systems have been incorporated. Flexibility has been introduced through non-bearing interior walls, easily movable desks and other equipment, and well-organized, smartly tailored rooms are common, featuring acoustic and glazed tile, terrazzo flooring, metal partitions, suspended ceilings and fluorescent fixtures. Warm colours are used for north rooms, cool colours for sunny rooms and special rooms are designed for such courses as home economics, mechanics, music and chemistry.

Most of the universities have conducted financial campaigns for expansion at some time during the past ten years and indications are that many more such campaigns must be undertaken in the near future. Despite expansion and modernization, there are still some old and crowded buildings in use which contrast sharply with the new well-planned, roomy, permanent structures on spacious campuses. All Canadian universities are expanding, whether they are located in the cramped heart of a city, have begun again in suburban areas, or were fortunate enough to have ample room on their first campus sites.

Special Education.—Each year increased provision is made for children who need special programs, particularly for those in the cities where numbers warrant such attention. There are in Canada six schools for the blind and nine schools for the deaf and in a number of centres classes are held for hard-of-hearing pupils and for those with poor vision. Other physically handicapped children for whom instruction is provided include cerebral-palsied, orthopaedic, and hospitalized and home-bound tubercular and delicate children as well as the mentally retarded and emotionally disturbed. In addition to the special assistance given to the handicapped, a limited number of classes are conducted for mentally gifted children. Special educational services are also provided for the Indian and Eskimo nomads of Northern Canada and for isolated children such as those serviced by railway-car classrooms in northern Ontario and by bus classrooms in British Columbia.

Altogether, about 50,000 children are cared for in one or another of 110 special public schools, 590 classes, and 130 private schools, some of which receive government aid. About 2,000 teachers conduct these services.

Financing Education.—Almost 3 p.c. of Canada's total national income, or about \$1,100,000,000, was expended on formal education during 1956. Just over 9 p.c. of all municipal, provincial and federal revenue went for education, with the municipalities providing 50 p.c. and the provinces 43 p.c. of the total. Municipal revenue is obtained mainly from direct taxes on land and improvements and from business taxes; provincial revenue is obtained from a variety of sources such as corporation taxes, sale of alcoholic beverages, tobacco, etc., licences, permits, etc., and from federal tax-rental agreements, and may also be secured through a special education tax of from 2 to 4 p.c. on sales.

Federal expenditures on education include sums for the education of Indians and Eskimos, children of members of the Armed Services, war dead and veterans. They also include grants to the National Federation of Universities to be divided among the provinces on a per capita basis and then distributed among the universities of a province according to the number of regular full-time students enrolled. Other grants are provided, usually on a matching basis, to the provinces for vocational education; scholarships and grants-in-aid of research are awarded to universities and individuals by the National Research Council, the Defence Research Board, the Canada Council and various departments of government; and grants for libraries and student residences are awarded through the Canada Council.

The provincial departments of education make grants to all publicly controlled schools and are also financially responsible for an increasing number of services. Such services, as mentioned previously, include the establishment and maintenance of teacher-training colleges or assistance to universities for the provision of that training; the establishment and maintenance of technical institutes and trade schools; and the provision of correspondence courses.

Municipal governments must provide money for buildings and equipment, maintenance and other operating expenditures. They must raise, by direct taxes, the difference between the amounts budgeted for by the school boards and the grants received from the provincial government. Provincial grants account for from 81 p.c. of the total school board revenue in Newfoundland to 35 p.c. in New Brunswick. Methods of payment vary. British Columbia, Nova Scotia and Manitoba no longer pay flat and incentive grants, but instead pay operation grants based on equalization formulas. Two other provinces—Newfoundland and Prince Edward Island—achieve a degree of equalization by paying the greater part of the cost of instruction. Ontario, Saskatchewan and Alberta make use of various flat and equalization grants, and New Brunswick and Quebec use flat and special grants. In addition, most provinces provide grants for capital expenditure, establish loan funds, and guarantee and assist in marketing debentures.

Private schools are normally supported from endowment income, gifts from religious or other sponsoring or operating bodies, and student fees.

Universities and colleges receive about 52 p.c. of their current operating expenditure from the federal and provincial governments, 30 p.c. from fees, 7 p.c. from endowments and gifts, and 11 p.c. from various other sources.

Vocational and Technical Education.—There has been considerable growth in vocational and technical education during the past decade. Technical education is mainly administered by the provincial departments of education, except in Quebec where it is administered by the Department of Youth. Across Canada approximately 200 pro-

vincial and municipal institutions give technical and trade training. Of these, 20 to 25 offer mainly post-secondary or advanced two-year or three-year technical courses, about 100 offer secondary-level industrial and trade courses, and 75 to 80 provide trade courses for apprentices.

Provincial trade schools and technical institutes are organized by the provinces to complement the work of the vocational schools and train qualified tradesmen and technicians. Contributions of the Federal Government, usually on a sharing basis with the province, have been a matter of contributing to the economic efficiency of the people in consideration of home and foreign markets. Grants are made according to agreement which provides for assistance to appropriate provincial government authorities operating acceptable vocational training projects. These schools are frequently assisted by industry, which may give financial assistance, employ students for the summer, assist in shaping the course of study, and provide equipment. Some of these schools offer a wide range of courses such as engineering technology, radio, electronics, metal trades, stenography, computing devices operation, and apprenticeship in the skilled trades.

Several other provincial departments of government offer specialized courses in such occupations as papermaking, textiles, mining, forestry, agriculture, navigation and dairying. The Armed Forces train certain recruits for technical positions in the Services and assist others to take university courses through extension or otherwise.

Nursing education is provided in schools of nursing attached to the larger hospitals, and advanced training is given in university hospitals.

Private trade schools, some offering correspondence courses only, give a wide variety of courses in fields ranging from hair styling to automotive engineering, and for occupations as dissimilar as artist, time-study engineer, and radio technician.

Teachers and Teachers' Salaries.—Candidates for teaching certificates are generally required to have high school completion or better, plus one year of professional training. Teacher training is given in provincial teacher-training colleges in courses lasting one school year or occasionally two, or in the universities where the training is usually combined with arts and science classes in a regular three-year or four-year university course. Secondary school teachers must have university graduation plus one year of professional training, or a special four-year university course in education.

In 1958-59 there were 119 normal schools and teachers' colleges preparing teachers, and 24 university faculties of education. Together these institutions graduated more than 10,000 teachers. In 1958-59 there were 142,157 full-time teachers in the elementary and secondary schools and 6,610 in universities and colleges; about 73 p.c. were women and 38 p.c. of these were married. The majority were between 24 and 45 years of age.

Teachers are generally employed according to a local salary schedule, belong to a provincial superannuation scheme and are members of a professional organization.

Research in Education.—The wide variety of research at present being undertaken in the field of education is expanding in scope and increasing in variety of method, and involves large numbers of personnel. Among the types found are historic and other studies, surveys, projects in applied research including action research, and a limited amount of basic or pure research. Most of the pure research is conducted in the universities by individuals or teams of professors and graduate students and the same personnel may conduct applied research. Applied research is also conducted by such organizations as the Canadian Education Association, the Canadian Teachers' Federation, the Education Division of the Dominion Bureau of Statistics, l'Association canadienne des Éducateurs

de Langue française, the Industrial Foundation on Education, the Canadian Universities Foundation, etc. In addition, certain of the departments of education and city school boards have research officers who, for the most part, conduct research into curricula examinations, promotion policies, use of visual aids, and related problems.

Operation or action research which developed during the Second World War has been adapted to many fields including education and is aimed at carrying out a certain operation as well as possible with the means available. Administrators and others are making considerable use of such procedure but it is difficult to decide just when such action should properly be designated as research.

One of the most promising portents for the future of research in education is the formation of provincial or regional councils to provide co-ordination of effort, to ensure professional advice, to publicize research findings, and to encourage research into imminent problems. Three such councils are well organized and publish journals. Several national bodies interested in research in education have formed a National Advisory Council on Educational Research which has provided liaison among its constituent bodies and is considering expanding its services through publications and advisory services.

During the past decade there have been several provincial Royal Commissions appointed to enquire into education as a whole, or some phase of it. Many of these have made use of research techniques as well as receiving submissions from interested bodies and individuals.

A number of longitudinal studies covering secondary pupils in one or several provinces are assessing the utilization of student resources related to university graduation. Other extensive studies have been, or are, related to school administration, visual aids and school finance. In addition, a limited amount of institutional research is being undertaken by several universities.

Section 2.—Statistics of Schools, Universities and Colleges

Education institutions may be grouped in the following categories: publicly controlled schools, privately controlled schools, universities and colleges, and federal schools. The publicly controlled schools, by far the largest group, include, in addition to all publicly controlled elementary and secondary schools, vocational institutes and trade schools, teacher-training colleges, correspondence courses, and schools for the blind and deaf. Private schools may be academic, business or trade schools, or correspondence schools. The universities and colleges may be provincial institutions, church institutions, or independent. The federal schools include those for Indians, schools in the Northwest Territories and schools overseas for children of members of the Armed Forces or for Armed Forces personnel. Evening courses may be given by public schools, usually assisted by provincial grants, by private schools, by universities or colleges, or by other organizations.

Table 1 shows the number of schools, teachers and pupils for all types of education institutions classified by province, for the academic year 1958-59. In all types of schools, the number of pupils has been increasing. The increase was first noticed at the elementary level some six years after the birth rate began to rise during the war years. In about eight years the children born during the War were entering high school and four years later they began entering university, swelling the ranks already greatly increased by an influx of veterans. The number of teachers is rather closely related to the number of students although the trend is toward larger classes. On the other hand, the number of schools has remained fairly constant, the increase caused by the construction of new and larger schools in urban areas being counterbalanced by the closing of many one-room rural schools.

1.—Schools, Teachers and Enrolment for All Types of Education Institutions, by Province, School Year 1958-59

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Elementary and Secondary Education—												
Public and Separate—												
Schools.....	1,245	454	1,485	1,423	8,281	7,542	1,745	2,014	1,255	1,183	51	27,578
Teachers.....	3,901	853	6,177	5,337	41,084	43,586	6,919	8,240	10,855	10,667	235	137,854
Pupils.....	119,377	22,702	171,386	141,786	1,000,939	1,249,673	167,299	198,847	261,554	292,403	5,719	3,631,685
Overseas (DND)—												
Schools.....	...	...	...	...	...	...	...	...	...	...	...	15
Teachers.....	...	...	...	...	...	...	...	...	...	...	...	262
Pupils.....	...	...	...	...	...	...	...	...	...	...	...	5,845
Indian—												
Schools.....	—	1	8	9	24	111	87	78	51	82	2	453
Teachers.....	—	2	31	22	101	246	202	200	198	198	9	1,209
Pupils.....	—	37	673	512	2,086	6,784	4,838	4,553	4,280	5,848	247	29,868
Blind—												
Schools.....	—	—	1	—	3	1	—	—	—	1	—	6
Teachers.....	—	—	20	—	39	25	—	—	—	9	—	93
Pupils.....	33	5	68	47	209	133	20	26	19	63	1	624
Deaf—												
Schools.....	—	—	1	—	3	1	1	1	1	1	—	9
Teachers.....	—	—	22	—	83	59	5	21	24	20	—	234
Pupils.....	58	6	106	73	649	462	93	101	139	170	3	1,800
Private—												
Schools.....	1	5	24	15	803	122	48	35	52	69	—	1,174
Teachers.....	3	56	247	176	4,896	1,398	401	244	281	663	—	8,362
Pupils.....	3	1,423	6,065	2,882	91,850	23,742	10,075	4,370	5,471	15,811	—	161,689
Higher Education—												
Institutions.....	2	2	16	9	204	62	10	16	10	8	—	359
Students ⁴	1,080	420	5,000	3,400	31,000	27,800	5,300	4,480	5,350	10,570	—	94,400

For footnotes, see end of table, p. 384.

1.—Schools, Teachers and Enrolment for All Types of Education Institutions, by Province, School Year 1958-59—concluded

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Teacher Training—												
Teachers' Colleges—	—	—	1	1	105	9	1	2	—	—	—	119
Institutions—	—	—	16	24	810	148	22	35	—	—	—	1,065
Teachers—	—	—	424	568	7,695	4,688	620	830	—	—	—	14,825
Students—												
Faculties of Education—	1	1	4	4	5	2	2	1	2	2	—	24
Faculties ¹ —	0	2	14	8	54	35	9	8	51	63	—	253
Teachers—	596	30	261	77	840	457	170	481	1,320	2,229	—	6,461
Students ² —												
Vocational Education—												
Trade Courses (Pre-employment)—	175	—	575	89	8	2,565	638	812	3,390	620	—	8,864
Pupils ³ —												
Vocational High School Courses—	303	115	850	4,420	18,174	50,463	2,624	3,886	10,639	7,836	78	99,388
Pupils ⁴ —												
Post-Secondary Courses—	—	—	246	55	3,531	2,643	—	25	654	260	—	7,414
Pupils—												
Business Colleges—	—	1	7	8	144	75	8	8	11	13	—	275
Colleges—	—	8	23	27	565	338	44	41	62	53	—	1,153
Teachers—	—	—	—	—	—	—	—	—	—	—	—	—
Pupils—	—	8	456	432	8,718	5,328	1,083	890	1,205	1,399	—	19,511
Full-time—	—	8	162	475	7,146	7,502	2,448	907	1,800	2,303	—	22,733
Part-time and evening—	—	—	—	—	—	—	—	—	—	—	—	—
Adult Education—												
Enrolment—	3,532	3,871	8,781	10,971	110,228	139,287	27,438	10,224	16,457	42,131	18,358 ⁵	397,278
Publicly operated schools—	—	137	5,245	6,294	24,723	47,142	5,122	7,838	13,633	16,718	—	126,852
Universities and colleges—	—	—	—	—	—	—	—	—	—	—	—	—

¹ Day, residential and hospital schools administered by the Federal Government.
² Full-time, university grade.
³ Also included with "Higher Education".
⁴ Included with "Public and Separate—Pupils".
⁵ Included with Nova Scotia.

⁶ Enrolment by home province of pupils.

⁷ Apprenticeship training in Quebec is on a pre-employment basis.

⁸ Includes enrolment in federal penitentiaries, Indian reserves and Department of Veterans Affairs courses.

⁹ Included with public schools.

For the first time an attempt has been made to tabulate total expenditure on education, including formal education at all levels, vocational training of all types and also expenditures on cultural activities related to education such as adult night classes, fine arts and handicraft courses, and libraries, museums and art galleries. Such expenditure for the year 1956 is presented in Table 2, classified by source. Details of income of school boards for publicly controlled elementary and secondary schools for the years 1952-56 are given at pp. 391-392 and financial statistics for universities and colleges at pp. 396-398.

2.—Total Expenditure on Formal Education, Vocational Training, and Related Cultural Activities, by Source of Funds, 1956

Type of Education	Local Taxation	Pro- vincial Govern- ments ¹	Federal Govern- ment	Fees	Other Sources	Total Expend- iture
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Formal Education—						
Elementary and Secondary—						
Public schools.....	393,636	289,088	14,157	5,677	15,287	717,845
Handicapped outside the public schools.....	508	4,102	..	..	275	4,885
Government correspondence schools.....	...	1,115	28	400	...	1,543
Indian and Eskimo education.....	...	...	17,074 ²	...	...	17,074
Private schools.....	...	...	...	18,496	2,993	21,489
Totals, Elementary and Secondary.....	394,144	294,305	31,259	24,573	18,555	762,836
Teacher training outside universities.....	...	6,574	10	342	4	6,930
Higher Education—						
Universities and colleges.....	317	40,533	17,804 ³	25,105	8,243	92,002
Research in universities.....	4	222	4,649	...	3,262	8,137
Defence colleges.....	...	...	4,251	...	...	4,251
Institutes of technology.....	...	6,445	179	735	66	7,425
Other (scholarships, etc.).....	...	1,708	2,258	...	1	3,967
Totals, Higher Education.....	321	48,908	29,141	25,840	11,572	115,782
Undistributable expenditure.....	...	...	223	...	...	223
Totals, Formal Education.....	394,465	349,787	60,633	50,755	30,131	885,771
Vocational Training—						
Apprenticeship.....	...	1,659	1,089	103	8	2,859
Trades training.....	...	9,688	1,157	618	393	11,856
Training of unemployed.....	...	427	414	...	1	842
Training of handicapped.....	...	204	227	...	...	431
Training of health and welfare personnel.....	...	1,103	464	...	...	1,567
Training of inmates of reform institutions.....	...	581	209	...	...	790
Other public expenditures on vocational training.....	...	490	935	1	...	1,426
Private business colleges.....	...	...	...	3,193	...	3,193
Totals, Vocational Training.....	...	14,152	4,495	3,915	402	22,964
Cultural Activities—⁴						
Night schools.....	5	262	10	..	..	272
Other adult education.....	..	921	366	1	1	1,289
Fine arts and handicrafts.....	..	1,022	250	...	1	1,273
Libraries.....	8,033	2,399	842	43	691	12,008
Archives, museums and art galleries.....	...	1,284	1,956	...	5	3,245
National Film Board productions.....	...	...	1,027	...	...	1,027
Cultural societies grants.....	..	79	26	...	...	105
UNESCO grant.....	...	...	586	...	...	586
Totals, Cultural Activities.....	8,033	5,967	5,063	44	698	19,805

¹ Including the Yukon and Northwest Territories.

² Federal expenditure for blind and deaf Indians

and Eskimos.

³ Includes \$4,628,000 held in trust for Quebec universities.

⁴ Limited to reported expenditures of public funds.

⁵ Included in "Elementary and Secondary—Public schools".

Subsection 1.—Elementary and Secondary Schools

Control.—Direct control and operation of public schools is by school boards, which operate under school laws and regulations, and the members of which are elected or appointed usually for terms of two or three years. As stated on p. 378, through amalgamations and consolidations, schools are now operated by boards of larger units, local boards within larger units, independent boards for rural schools, towns or cities, and some by official trustees appointed by the province in lieu of a board. As their designations imply, private schools and federal schools are administered by private organizations and federal authorities, respectively.

Table 3 gives the number of active public school boards in each province in 1957 and indicates the type of board, the number of official trustees and the number of board members elected or appointed to these boards.

3.—Active School Boards and School Trustees, by Province, 1957

Province	Boards of Larger Units	Local Boards within Larger Units	Independent Local Boards	Total Boards	Official Trustees ¹	Trustees ²	
						Appointed	Elected
	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	—	—	308	308	—	1,850	—
Prince Edward Island.....	1	—	450	451	—	16	1,415
Nova Scotia.....	24	1,685	53	1,762	—	455	5,055
New Brunswick.....	14	735	78	827	2	834	2,143
Quebec—							
Roman Catholic.....	—	—	1,615	1,615	—	18	8,036
Protestant.....	9	52	210	271	—	7	1,119
Ontario.....	775	6	3,148	3,929	—	1,560	13,930
Manitoba.....	17	—	1,615	1,632	25	—	5,578
Saskatchewan.....	109	4,802	465	5,376	234	—	14,399
Alberta.....	59	3,918	138	4,115	—	—	12,622
British Columbia.....	81	—	5	86	16	31	536
Totals.....	1,089	11,198	8,085	20,372	277	4,771	64,833

¹ Usually the school inspector, delegated to act where a board cannot be elected. necessary.

² Included with independent local boards.

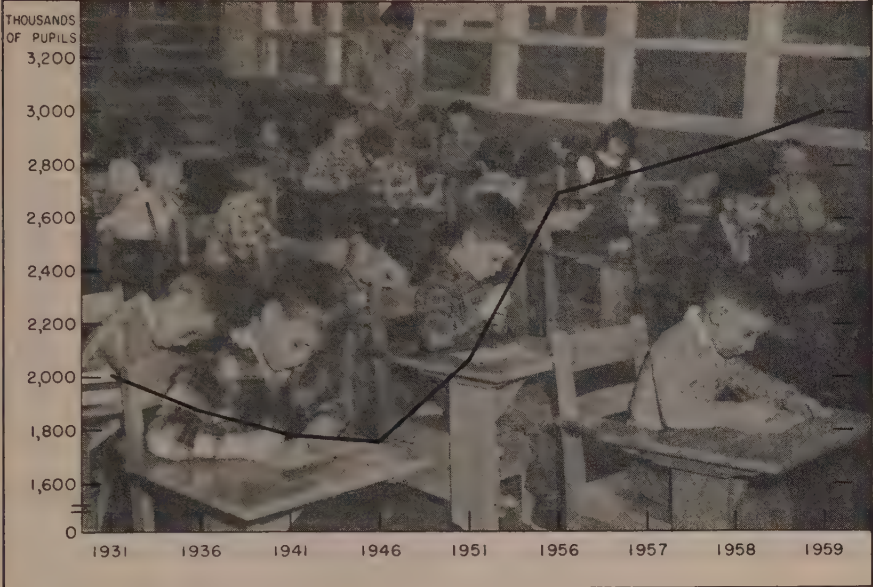
² Estimated where

Enrolment.—Enrolment in all publicly controlled day schools increased from 1,092,633 in 1901 to 2,264,106 in 1931, but dropped during the 1930's and the early 1940's, when the birth rate was low, to 2,060,718 in 1944. After 1944 it rose slowly for some years and then at an accelerated rate to reach 3,548,206 in 1957. From 1954 to 1957 enrolment advanced by 228,000 a year for the country as a whole though the increase varied from province to province, ranging from 5 p.c. for Prince Edward Island and 11 p.c. for Saskatchewan to 26 p.c. for Ontario and 32 p.c. for British Columbia.

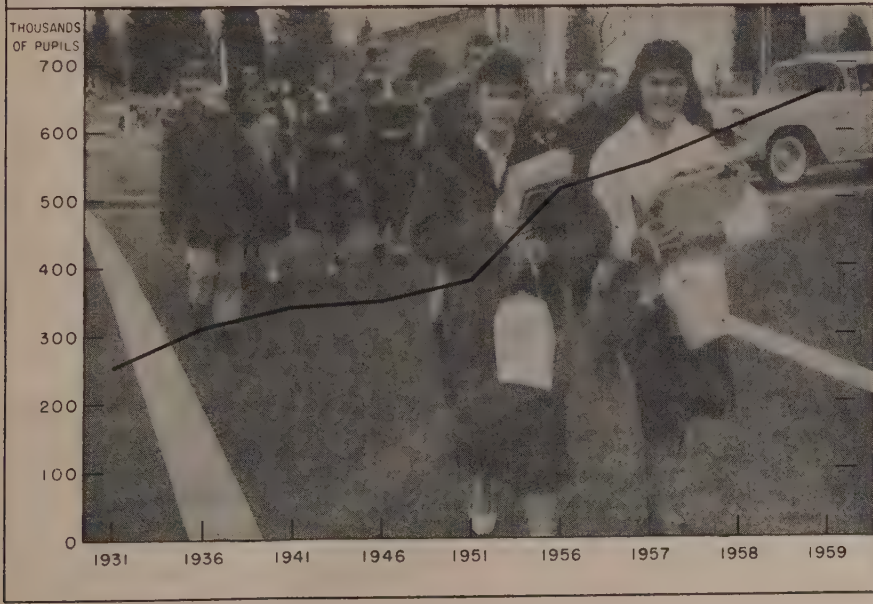
Enrolment in private elementary and secondary schools accounts for 4 p.c. of the total enrolment in these schools. The number of private school pupils, which was 100,000 in 1950 and 1952, rose rather sharply to a peak of 151,141 in 1956 but dropped slightly to 150,476 in 1957.

Table 4 shows enrolment of all elementary and secondary pupils in the provinces and territories and in Department of National Defence schools overseas, and classifies them by grade. It also shows the numbers attending private and Indian schools in each province and territory.

ENROLMENT IN PUBLICLY CONTROLLED ELEMENTARY SCHOOLS



ENROLMENT IN PUBLICLY CONTROLLED SECONDARY SCHOOLS



4.—Enrolment in Publicly Controlled and Private Schools, School Year 1958-59

Grade	New- foundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
	No.	No.	No.	No.	No.	No.
Kindergarten.....	4,546	140	17,311	71	10,800	84,178
Grade 1.....	16,032	2,813	17,867	17,738	134,321	143,507
Grade 2.....	13,899	2,574	17,313	15,845	129,808	129,407
Grade 3.....	13,707	2,712	17,426	16,222	130,658	122,584
Grade 4.....	13,120	2,625	17,702	16,148	130,965	115,506
Grade 5.....	12,282	2,627	17,505	16,523	126,370	117,433
Grade 6.....	11,616	2,512	17,025	14,721	115,486	114,747
Grade 7.....	10,225	2,219	15,007	13,189	99,218	103,942
Grade 8.....	8,217	1,759	12,072	10,397	79,619	84,893
Grade 9.....	7,712	1,597	10,148	8,175	59,399	86,459
Grade 10.....	4,887	1,314	8,608	7,002	39,286	68,271
Grade 11.....	2,796	662	6,680	4,887	28,430	46,525
Grade 12.....	73	531	2,557	3,308	5,318	35,170
Grade 13.....	—	—	82	130	290	16,106
Auxiliary.....	—	20	399	261	2,340	2,065
Special.....	265	57	422	563	850	9,406
Unclassified.....	—	—	—	—	1,717	—
Totals.....	119,377	24,162	178,124	145,180	1,094,375	1,230,199
Publicly controlled.....	119,279	22,702	171,386	141,786	1,000,939	1,249,673
Private.....	98	1,423	6,065	2,882	91,850	23,742
Indian ¹	—	37	673	512	2,086	6,784
	Manitoba	Saskat- chewan	Alberta	British Columbia	Yukon and N.W.T.	DND Schools Overseas
	No.	No.	No.	No.	No.	No.
Kindergarten.....	5,883	2,803	593	4,128	218	752
Grade 1.....	20,852	23,882	31,851	35,785	1,441	793
Grade 2.....	19,180	22,179	29,098	32,112	894	690
Grade 3.....	18,440	21,491	27,868	31,476	758	615
Grade 4.....	18,062	20,540	26,923	30,738	565	580
Grade 5.....	17,893	20,748	26,863	29,933	476	618
Grade 6.....	17,485	19,791	26,458	30,010	453	550
Grade 7.....	16,169	17,801	23,487	27,562	333	403
Grade 8.....	13,128	15,202	19,993	23,569	323	258
Grade 9.....	12,528	14,215	18,994	22,106	221	229
Grade 10.....	10,204	11,682	15,743	19,163	149	151
Grade 11.....	8,492	8,942	12,564	14,764	79	105
Grade 12.....	3,273	7,033	10,735	10,403	43	63
Grade 13.....	—	37	—	1,065	—	38
Auxiliary.....	34	878	—	1,178	—	—
Special.....	589	546	145	70	13	—
Unclassified.....	—	—	—	—	—	—
Totals.....	182,212	207,770	271,315	314,062	5,966²	5,845
Publicly controlled.....	167,299	198,847	261,554	292,403	5,719	5,845
Private.....	10,075	4,370	5,471	15,811	—	—
Indian ¹	4,838	4,553	4,290	5,848	247	—

¹ Indian pupils in federal Indian schools, 3,692 pupils.² Total for the Yukon, 2,274 pupils and total for N.W.T., 3,692 pupils.

Teaching Staffs.—Between the school years ended in 1939 and 1959 the number of teachers in the publicly controlled schools in the ten provinces increased 89 p.c. from 75,446 to 142,157. The number of men teachers increased 94.6 p.c. and the number of women teachers 186.2 p.c.

In 1959, in the nine provinces outside of Quebec, 77.7 p.c. of the teachers had at least senior matriculation and one year of professional training, and an additional 12.2 p.c. had one year less schooling. Median experience in the eight provinces outside of Ontario and Quebec has slowly increased from 6.7 years in 1939 to 8.3 years in 1959, despite the large numbers of new teachers each year. Many of these have been recruited by the cities, where the median experience has declined from a high of 16.7 years in 1946 to 10.4 years in 1958 and 11.0 years in 1959.

Between 1939 and 1959, median salaries for all teachers in the nine provinces other than Quebec increased 339.9 p.c. from \$854 to \$3,757, while that for teachers in one-room schools increased 135.7 p.c. from \$607 to \$2,645. The annual increments beginning with a modest 2 p.c. in 1945 accelerated year by year to reach 6.1 p.c. in 1954, decreasing slightly to 4.7 p.c. in 1958 but increasing to 7.0 p.c. in 1959. Increases over the 20 years varied among the provinces from 161.7 p.c. in British Columbia to only 11.1 p.c. in Saskatchewan.

Table 5 gives information on the number, median salary, median experience, and qualifications for elementary and secondary teachers in all provinces.

5.—Teachers and Principals in Publicly Controlled Elementary and Secondary Schools, School Year 1953-59

Province		Number Reporting	Median Salary	Median Experience	Fully Qualified ²	University Graduates
TEACHING ELEMENTARY GRADES ¹						
			\$	yrs.	p.c.	p.c.
Newfoundland.....	M.	1,005	1,623	2.2	18.2	6.9
	F.	2,302	1,703	3.3	9.4	2.1
Prince Edward Island.....	M.	70	1,885	4.0	12.9	7.1
	F.	683	1,861	6.5	7.3	0.6
Nova Scotia.....	M.	417	3,136	7.1	78.7	38.4
	F.	4,376	2,474	10.0	56.7	9.5
New Brunswick.....	M.	402	2,735	3.4	39.8	22.1
	F.	3,742	2,224	7.9	20.1	2.9
Ontario.....	M.	7,231	4,296	..	88.2	19.7
	F.	26,727	3,419	..	80.7	4.6
Manitoba.....	M.	1,104	3,140	5.6	67.1	22.1
	F.	3,946	2,989	7.4	69.2	6.9
Saskatchewan.....	M.	1,537	3,795	7.9	96.5	8.8
	F.	4,936	3,501	8.0	93.7	2.4
Alberta.....	M.	1,387	4,539	8.2	91.5	35.0
	F.	6,054	3,773	8.6	85.7	6.6
British Columbia.....	M.	2,245	4,775	6.8	88.9	34.1
	F.	5,183	4,114	7.7	82.4	10.9

5.—Teachers and Principals in Publicly Controlled Elementary and Secondary Schools, School Year 1958-59—concluded

Province	Number Reporting	Median Salary	Median Experience	Fully Qualified ²	University Graduates
TEACHING SECONDARY GRADES ³					
		\$	yrs.	p.c.	p.c.
Newfoundland.....M.	376	4,454	10.9	46.8	51.1
F.	213	3,784	15.7	24.9	29.6
Prince Edward Island.....M.	52	3,542	10.6	36.5	46.2
F.	48	2,558	14.0	25.0	31.3
Nova Scotia.....M.	616	4,261	9.1	82.8	73.2
F.	644	3,613	13.5	61.3	55.6
New Brunswick.....M.	615	4,104	7.7	67.2	49.9
F.	578	3,204	11.7	50.2	33.9
Ontario.....M.	6,251	6,442	..	88.3	81.7
F.	3,377	5,769	..	81.6	85.6
Manitoba.....M.	798	4,428	9.6	57.0	60.3
F.	495	4,047	13.7	63.2	65.3
Saskatchewan.....M.	1,141	5,733	12.3	63.5	60.5
F.	504	4,857	13.2	56.0	57.1
Alberta.....M.	1,615	5,933	12.5	64.9	69.0
F.	992	4,744	13.6	46.1	52.7
British Columbia.....M.	2,216	6,227	10.3	87.9	74.7
F.	1,023	5,454	11.9	73.3	66.8
TEACHING ELEMENTARY AND SECONDARY GRADES IN QUEBEC					
		\$	yrs.	p.c.	p.c.
Quebec Roman Catholic schools (Lay teachers).....M.	4,308	4,398	9.9	79.8	24.7
F.	21,638	1,937	6.0	24.0	1.3
Quebec Protestant schools.....M.	1,092	5,898	7.8	70.5	59.3
F.	3,232	3,686	7.7	53.2	7.3

¹ Comprises teachers and principals instructing or supervising kindergarten and elementary grades only, and those instructing or supervising both elementary and secondary grades in rural schools with five or fewer classes. Teachers and principals in Ontario are classified as elementary according to the provincial *Report of the Minister, 1958*.

² Fully qualified at the elementary level are teachers with junior matriculation and two or more years, or senior matriculation and one or more years of professional training. At the secondary level they are teachers with junior matriculation and four or more years, or senior matriculation and three or more years of schooling, of which one year was professional training. All teachers in Quebec were considered as fully qualified if they had a minimum of two years training after junior matriculation. Consequently, the Quebec data are not comparable with the data for the other provinces.

³ Comprises teachers and principals instructing or supervising both elementary and secondary grades in urban centres and in rural schools with six or more classes. Teachers and principals in Ontario are classified as secondary according to the provincial *Report of the Minister, 1958*.

Financial Support.—The public elementary and secondary schools are financed almost wholly from provincial grants and money derived from local taxation. Fees for elementary schooling may be charged in Quebec. In a few of the other provinces nominal fees are charged for the higher secondary grades; in Newfoundland there is little local taxation and fees are generally charged.

In general, school boards submit their budgets to the local municipal councils which levy for and collect the required amounts. However, school boards in Quebec and a few in other provinces have the power to levy and collect taxes for school purposes. Assessment, on which taxes for school purposes are levied, is the total valuation of land and

buildings, and sometimes improvements, personal property or business income are included. Steps have been taken by several provinces to equalize real property assessment over large areas or even over the whole province.

Each province has its own method of apportioning funds to local school boards. Grants are of two types. (1) The basic grant may be calculated on a minimum cost determined by an amount per classroom, salary and qualifications of the teacher, average attendance, etc. All provinces make some attempt to equalize educational opportunity through basing grants in part on some indication of need. (2) Special grants are paid to assist with transportation, music, arts and crafts, special classes, equipment, building costs, night classes, etc. These are largest in Quebec where there is marked emphasis on training for home industries, arts and crafts.

Newfoundland schools are supported largely from provincial funds. Tuition fees may be charged by school boards and by the boards of the colleges (actually schools of fairly high standard giving elementary and high school instruction) in the city of St. John's; additional fees may be charged for fuel or janitor service where these are not provided by pupils or their families. There has been no local taxation until very recently and it now exists only in a few of the larger centres. The provincial government pays teachers according to experience and qualifications and some school boards supplement this amount. The province also makes annual grants for plant maintenance and repairs and for new construction.

Table 6 presents a comparative statement of the finances of school boards operating publicly controlled schools, in so far as this information is available.

6.—Income of School Boards of Publicly Controlled Elementary and Secondary Schools, by Province, Fiscal Years Ended 1952-56

NOTE.—The receipts shown in this table do not include any amounts raised by loans or the sale of bonds or debentures as all revenue of this nature must be repaid ultimately with money raised by local taxation. Figures from 1914 are given in the corresponding table of previous Year Books beginning with the 1936 edition.

Province and Year	Income from—			Total Current Revenue Recorded	Debenture Indebtedness ¹
	Provincial Government Grants	Local Taxation	Other Sources		
	\$	\$	\$	\$	\$
Newfoundland ².....1952	4,141,417	—	1,338,336	5,479,753	..
1953	4,839,522	—	1,591,227	6,430,749	..
1954	6,239,486	—	1,323,323	7,562,809	..
1955	6,959,716	—	1,997,532	8,957,248	..
1956	7,715,895	—	2,400,478	10,116,373	..
Prince Edward Island ².....1952	679,901	600,546	71,619	1,352,066	..
1953	793,558	683,046	61,699	1,538,303	..
1954	928,054	731,414	79,347	1,738,816	..
1955	994,249	813,908	95,389	1,903,546	..
1956	1,077,575	855,740	62,482	1,995,797	..
Nova Scotia.....1952	6,919,130	7,371,292	..	14,290,422	..
1953	6,843,017	8,561,063	211,262	15,615,342	..
1954	8,067,936	9,591,684	216,729	17,876,349	..
1955	7,389,431	10,724,123	293,796	18,407,350	..
1956	10,748,523	11,383,492	181,550	22,313,565	..
New Brunswick.....1952	6,622,009	8,288,180	..	14,910,189	..
1953	6,949,677	9,066,116	378,045	16,393,838	..
1954	6,846,278	9,581,005	503,578	16,930,861	..
1955	6,775,614	10,407,409	498,051	17,681,074	..
1956	7,074,623	11,755,598	194,658	19,024,879	..
Quebec ².....1952	20,735,129	57,506,661	2,940,114	81,181,904	85,171,000
1953	25,004,169	64,978,371	3,448,005	93,430,545	110,283,000
1954	29,454,000	74,351,000	4,015,000	107,820,000	125,490,000
1955	26,420,000	76,222,000	18,802,000	121,444,000	165,935,000
1956	41,048,000	93,878,000	4,680,155	139,606,155	206,399,762

¹For footnotes, see end of table, p. 392.

6.—Income of School Boards of Publicly Controlled Elementary and Secondary Schools, by Province, Fiscal Years Ended 1952-56—concluded

Province and Year	Income from—			Total Current Revenue Recorded	Debtenture Indebtedness ¹
	Provincial Government Grants	Local Taxation	Other Sources		
	\$	\$	\$	\$	\$
Ontario.....	1952 53,968,946	105,621,372	4,067,919	163,658,237	176,872,294
	1953 57,881,260	115,351,323	5,292,181	178,524,764	217,011,443
	1954 67,017,621	134,283,382	4,855,351	206,156,354	259,228,426
	1955 73,649,871	145,485,189	12,404,143	231,539,203	..
	1956 80,292,926	164,295,105	11,913,872	256,501,903	..
Manitoba.....	1952 4,923,118	15,672,552	334,946	20,930,616	10,889,526
	1953 6,741,322	15,849,467	386,091	22,976,880	12,966,932
	1954 8,302,904	17,761,570	438,125	26,502,599	16,200,884
	1955 11,578,082	19,250,730	458,229	28,287,021	18,774,207
	1956 8,928,352	21,424,949	610,132	30,963,433	21,337,183
Saskatchewan.....	1952 8,721,620	21,063,694	507,302	30,292,616	7,063,834
	1953 8,531,823	23,075,560	529,322	32,136,705	10,451,011
	1954 10,285,634	23,284,137	613,640	34,183,411	11,889,601
	1955 11,594,469	25,145,782	722,586	37,462,837	16,110,696
	1956 12,993,200	29,707,169	82,866	42,783,235	19,160,360
Alberta.....	1952 10,957,753	25,214,092	1,003,244	37,175,089	32,442,816
	1953 12,834,292	28,135,523	1,068,409	42,038,224	41,586,816
	1954 15,860,193	31,284,290	1,224,478	48,368,961	51,869,722
	1955 24,979,893	26,904,108	1,521,558	53,405,559	60,563,488
	1956 26,742,290	30,374,780	1,399,565	58,516,635	66,493,578
British Columbia ²	1952 17,866,531	25,810,942	1,665,800	45,343,273	..
	1953 15,754,155	30,340,880	1,414,574	47,509,609	..
	1954 17,832,087	33,487,692	1,582,263	52,902,042	..
	1955 33,992,023	25,613,837	1,765,527	61,361,387	..
	1956 35,570,755	29,794,611	1,793,462	67,158,828	..

¹ Net figures, after deduction of sinking funds.

² Data for 1952 and 1953 are for the school year ended in June; those for subsequent years have been adjusted to the calendar year to correspond with the fiscal years of the other provinces.

Subsection 2.—Universities and Colleges

Institutions.—At the beginning of the 1958-59 academic year there were in Canada 339 institutions of higher education offering one or more years of degree-credit courses. Table 7 gives their distribution by province. Of the total, 292 were under the control of religious bodies (225 Catholic), 23 under provincial government control, three under Federal Government control, and 21 under private non-denominational control.

7.—Number of Institutions of Higher Education, by Province, Academic Year 1958-59

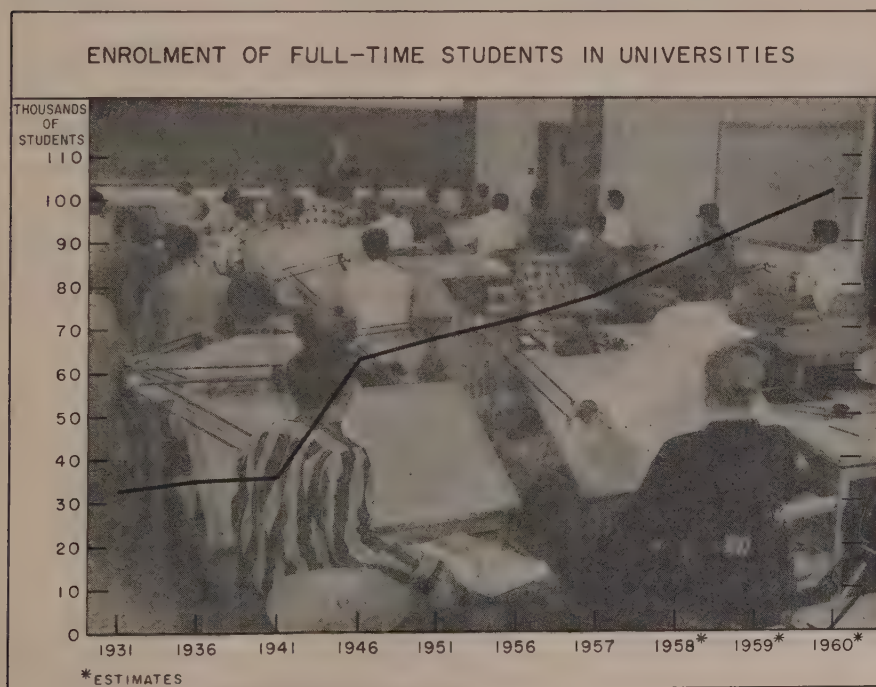
Province	Active Degree-Granting Institutions		Other Institutions	Total
	Theology Only	Other		
Newfoundland.....	—	1	1	2
Prince Edward Island.....	—	1	1	2
Nova Scotia.....	1	8	7	16
New Brunswick.....	—	6	3	9
Quebec.....	1	7	196	204
Ontario.....	7	10	45	62
Manitoba.....	2	1	7	10
Saskatchewan.....	4	1	11	16
Alberta.....	1	1	8	10
British Columbia.....	2	1	5	8
Totals.....	18	37	284	339

Enrolment.—Full-time university-grade enrolment exceeded 100,000 for the first time in 1959-60. Preliminary figures show 102,000 such students in attendance. Indications are that enrolments may well be double the 1959-60 figure in about 10 years. Table 8 gives figures on enrolment, by province, for the academic years ended 1957-60.

8.—Full-Time Regular Winter Session University-Grade Enrolment, by Province, Academic Years Ended 1957-60¹

Province	1956-57		1957-58		1958-59		1959-60	
	Under-graduate	Graduate	Under-graduate	Graduate	Under-graduate	Graduate	Under-graduate	Graduate
	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	731	9	1,000	20	1,059	21	1,049	21
Prince Edward Island.....	310	—	350	—	420	—	530	—
Nova Scotia.....	4,476	74	4,737	63	4,884	116	5,170	130
New Brunswick.....	2,763	37	3,082	48	3,336	64	3,613	87
Quebec.....	24,613	1,087	27,124	1,376	29,593	1,407	32,101	1,599
Ontario.....	22,194	1,606	23,974	1,826	25,763	2,037	27,189	2,211
Manitoba.....	4,379	121	4,784	116	5,168	132	5,646	204
Saskatchewan.....	3,329	71	3,811	89	4,371	109	4,692	168
Alberta.....	4,007	93	4,371	169	5,104	246	5,806	294
British Columbia.....	7,934	266	9,212	348	10,152	418	10,970	520
Totals.....	74,736	3,364	82,445	4,055	89,850	4,550	96,766	5,234

¹ Figures show enrolment at Dec. 1 of the academic year noted and comprise actual graduate enrolment reported, subtracted from preliminary figures for total enrolment based on Dec. 1 data available.



Foreign enrolment has risen considerably since the end of World War II, with a larger proportion of students from countries other than the United States and the United Kingdom coming to Canadian institutions, as shown in Table 9. In 1958-59 one of about 17 full-time university students in Canada was a resident of a country other than Canada. Hong Kong, Trinidad and the United Kingdom each accounted for over 500 students while France, India and Jamaica contributed from 100 to 200 each. Just over 100 other countries or territories are represented in the figures.

9.—Students from Other Countries in Canadian Universities, and Canadian Students in Universities in the United States and the United Kingdom, Selected Academic Years Ended 1931-59.

Academic Year Ended—	Total Full-Time University Enrolment in Canada	Students with Residence in—					Total Enrolment from Other Countries in Canada ¹	Canadians Studying in—	
		United States	United Kingdom	British West Indies	Newfoundland ¹	Other Countries		United States ²	United Kingdom ³
	No.	No.	No.	No.	No.	No.	No.	No.	No.
1931.....	32,926	1,506	333	54	175	236	2,304	1,313	212
1941.....	36,319	1,478	41	74	174	289	2,056	1,458	..
1951.....	68,306	1,758	164	252	...	1,014	3,188	4,528	372
1956.....	72,729	1,773	281	635	...	1,696 ⁴	4,385 ⁴	4,990	404
1959 ²	94,400	1,689	517	1,000	...	2,191	5,397 ⁴	5,432	438

¹ Before 1949 Newfoundland was considered as being a country outside Canada.

of International Education, New York.

² Data from the Association of Universities of the British Commonwealth, London, England. Newfoundland is included with Canada for all years.

³ Includes about 2,800 from British Commonwealth countries and territories.

Graduates.—Table 10 gives figures for graduates in most faculties for the four latest years for which figures are available.

10.—Graduates from Universities and Colleges, Academic Years Ended 1956-59

NOTE.—Figures for 1920-36 are given in the 1938 Year Book, pp. 993-997, and for 1937-55 in the corresponding table of subsequent editions.

Field of Study	1955-56		1956-57		1957-58		1958-59	
	Total	Female	Total	Female	Total	Female	Total	Female
	No.	No.	No.	No.	No.	No.	No.	No.
Graduates in Arts, Pure Science and Commerce	6,861	1,795	7,467	1,981	7,929	2,103	8,583	2,340
Bachelors of Arts ¹	5,337	1,593	5,782	1,774	6,054	1,889	6,389	2,081
Bachelors of Science (in Arts) ²	791	151	887	159	990	170	1,187	201
Bachelors of Commerce ³	733	51	798	48	885	44	1,007	58
Graduates in Applied Science	1,775	6	1,923	6	2,132	15	2,289	13
Bachelors of Applied Science in Engineering.....	1,597	4	1,741	2	1,930	6	2,047	4
Bachelors of Architecture ⁴	91	1	90	4	98	2	91	4
Bachelors of Forestry.....	81	1	87	—	101	7	150	5
Bachelors of Fisheries.....	6	—	5	—	3	—	1	—
Graduates in Agriculture, Veterinary Science and Household Science	537	227	536	246	577	273	594	242
Bachelors of Agricultural Science.....	242	7	237	9	247	12	294	8
First degrees in Veterinary Science.....	78	3	64	2	75	6	68	3
Bachelors of Household Science.....	217	217	235	235	255	255	232	231

For footnotes, see end of table.

10.—Graduates from Universities and Colleges, Academic Years Ended 1956-59—concluded

Field of Study	1955-56		1956-57		1957-58		1958-59	
	Total	Female	Total	Female	Total	Female	Total	Female
	No.	No.	No.	No.	No.	No.	No.	No.
Graduates in Education, Library Science and Social Service.	1,456	613	1,560	648	2,061	829	2,134	850
First degrees in education or pedagogy.	1,100	364	1,193	412	1,652	589	1,749	609
Librarian degrees and diplomas.	80	63	92	79	92	67	85	66
Physical education first degrees and diplomas.	83	47	87	34	99	42	103	42
Social service degrees and diplomas.	193	139	188	123	218	131	197	133
Graduates in Medicine and Related Studies.	1,616	367	1,708	428	1,745	448	1,751	469
Medical doctors.	826	53	875	60	847	45	842	45
Dentists.	160	13	177	4	202	4	196	7
Pharmacists.	318	51	282	54	265	42	296	53
First degrees in nursing.	120	120	174	174	195	195	230	230
Physiotherapy and occupational therapy.	129	129	132	132	160	160	130	130
Chiropractic.	42	1	42	2	40	1	35	3
Optometry.	21	—	26	2	36	1	22	1
Graduates in Law and Theology.	1,396	61	1,463	67	1,494	69	1,592	72
First degrees and equivalent diplomas in law.	629	24	663	34	649	28	722	28
Roman Catholic theological colleges.	499	—	526	—	559	—	542	—
Protestant theological colleges ¹ .	268	37	274	33	286	41	328	44
Other First Degrees and Equivalent Diplomas.	94	77	111	78	109	71	101	77
Bachelors of Fine and Applied Arts.	12	10	8	4	11	6	8	5
Bachelors of Interior Design.	5	5	9	7	9	6	14	13
Journalism.	11	6	28	15	32	20	20	9
Bachelors of Music.	66	56	66	52	57	39	59	50
Graduate and Honorary Degrees.	2,005	338	2,066	305	2,167	339	2,388	401
Honorary doctorates.	200	15	209	10	245	15	303	10
Doctorates in course.	266	17	292	23	272	25	284	30
Masters of Arts ² .	770	209	826	192	875	212	1,012	247
Masters of Science ³ .	402	31	389	35	414	32	463	46
Bachelors of Divinity.	80	3	116	1	129	4	113	2
Licences (except in Theology) ⁴ .	287	63	234	44	232	51	213	66

¹ Includes Bachelors of Letters and Social Science.² Some institutions include Science degrees in Arts.³ Includes Bachelors of Accounting and Secretarial Science.⁴ Includes diplomas in Architecture from the

School of Fine Arts of Montreal.

⁵ Includes all diplomas and degrees except for Bachelors of Divinity.⁶ Includes M. Com., M.Ed., M.Paed., M.S.W., as well as M.A. In some institutions, M.Sc. degrees are included

with M.A.'s.

⁷ Includes M.A.Sc., M.S.A., M.Sc.F., M. Arch., M.V.Sc., M.Sc. Dent., M. Surgery (where

conferred separately), as well as M.Sc.

⁸ The "Licence" in the French language universities is the next

degree in advance of the Bachelor.

Teaching Staffs.—Table 11 shows the trend in university teaching staffs since 1950.

11.—Full-Time Teaching Complement in Universities and Colleges, Academic Years Ended 1950-59

NOTE.—Figures for 1957-59 are based on returns from a sampling of institutions and are subject to revision. It appears that figures for earlier years may have been too high owing to the inclusion of non-teaching and junior research staff members.

Academic Year Ended—	Teachers	Academic Year Ended—	Teachers
	No.		No.
1950.	5,246	1955.	6,474
1951.	5,539	1956.	6,719
1952.	5,874	1957.	5,540
1953.	6,047	1958.	5,980
1954.	6,503	1959.	6,610

Table 12 gives median salaries, by rank and region, for the staffs of 17 major institutions for 1959-60.

12.—Median Salaries of Teachers at 17 Universities and Colleges, Academic Year 1959-60

NOTE.—Institutions include: *West*—Universities of Manitoba, Saskatchewan, Alberta, British Columbia; *Central*—Bishop's, McGill, Queen's, Toronto, Victoria, Trinity, McMaster, Western Ontario; *Atlantic*—Acadia, Dalhousie, St. Francis Xavier, Mount Allison, New Brunswick.

Rank	Region				Staff Complement
	Atlantic Provinces	Central Provinces	Western Provinces	Total	
	\$	\$	\$	\$	No.
Deans.....	11,500	15,179	13,500	14,150	97
Professors.....	9,175	12,197	11,437	11,591	920
Associate professors.....	7,212	9,056	9,032	8,924	930
Assistant professors.....	5,944	7,194	7,186	7,117	1,166
Instructors and lecturers.....	4,556	5,624	5,689	5,573	735
Totals.....	6,302	8,046	8,348	7,979	3,870¹

¹ Includes 22 ungraded professors.

Finances.—Since 1952, grants from federal, provincial and municipal governments to a group of institutions representing about 80 p.c. of the total full-time university-grade, enrolments have exceeded half of the total current income, less ancillary enterprises. Table 13 gives a historical series of the finances of this group of institutions. The institutions omitted are mainly those conducted by religious orders where teachers receive little or no salary and for which financial returns are consequently not comparable.

13.—Current Income and Expenditure of Universities and Colleges, Academic Years Ended 1948-57

NOTE.—Institutions included represent about 80 p.c. of the total full-time university-grade enrolment.

Academic Year Ended—	Current Income					Total Current Expenditure
	Endowments and Investments	Government Grants	Student Fees ¹	Miscellaneous	Total ¹	
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1948.....	2,387	14,863	14,903	4,689	36,842	36,664
1949.....	2,568	16,218	15,959	4,845	39,590	39,197
1950.....	2,950	16,959	15,409	5,140	40,458	40,697
1951.....	3,127	18,733	14,025	4,647	40,532	40,792
1952.....	3,185	25,284	14,544	5,208	48,221	47,195
1953.....	2,979	26,554	14,260	6,675	50,468	50,116
1954.....	3,517	30,918	15,901	6,421	56,757	55,856
1955.....	3,533	32,417	17,248	7,316	60,514	60,009
1956 ^p	4,500	35,000	17,500	7,300	64,300	64,400
1957 ^p	4,900	40,000	21,000	9,100	75,000	71,000

¹ Board and lodging not included.

The Federal Government established a system of university grants for current operating purposes, the first of which were paid during the academic year ended 1952. The grants were paid on the basis of 50 cents per head of population in each province, the eligible institutions receiving their shares of the total provincial allotment according to the number of full-time students at university level attending degree or graduate diploma courses. For 1956-57 and 1957-58 the payment was \$1 per head of population. In 1958-59 it was increased to \$1.50 per head of population. The distribution of payments, by province, is shown in Table 14.

14.—Federal Government Grants to Universities, by Province, Academic Years Ended 1956-60

NOTE.—Figures for 1952-55 are given in the 1959 Year Book, pp. 356-357.

Province and Academic Year Ended—	Institutions	Eligible Enrolment	Total Grants ¹	Grant per Eligible Student
	No.	No.	\$	\$
Newfoundland.....1956	1	576	206,000	357.64
.....1957	1	740	415,074	560.91
.....1958	1	1,011	426,000	421.36
.....1959	1	1,080	657,000	608.33
.....1960	1	1,060	673,500	635.38
Prince Edward Island.....1956	2	260	54,000	207.69
.....1957	2	310	99,285	320.27
.....1958	2	350	99,000	282.86
.....1959	2	413	150,000	363.20
.....1960	2	525	153,000	291.43
Nova Scotia.....1956	12	4,224	341,500	80.85
.....1957	12	4,470	694,717	155.42
.....1958	13	4,740	702,000	148.10
.....1959	13	4,946	1,065,000	215.33
.....1960	13	5,284	1,074,000	203.26
New Brunswick.....1956	6	2,483	279,000	112.36
.....1957	6	2,775	554,616	199.86
.....1958	6	3,087	565,000	183.03
.....1959	6	3,340	865,500	259.13
.....1960	6	3,644	885,000	242.87
Quebec ².....1957	6	23,898	4,628,378	193.67
.....1958	7	26,806	4,758,000	177.50
.....1959	9	29,320	7,326,000	249.86
.....1960	11	32,153	7,498,500	233.21
Ontario.....1956	27	18,801	2,591,500	137.84
.....1957	29	20,723	5,404,933	260.82
.....1958	30	22,346	5,622,000	251.59
.....1959	30	23,984	8,704,500	362.93
.....1960	30	26,068	8,928,000	342.49
Manitoba.....1956	7	4,180	424,500	101.56
.....1957	8	4,430	850,040	191.88
.....1958	8	4,796	860,000	179.32
.....1959	8	5,277	1,305,000	247.30
.....1960	8	5,746	1,327,500	231.03
Saskatchewan.....1956	14	2,925	444,500	151.97
.....1957	14	3,327	880,665	264.70
.....1958	14	3,827	879,000	229.68
.....1959	13	4,426	1,332,000	300.95
.....1960	13	4,742	1,353,000	285.32
Alberta.....1956	4	3,558	533,000	149.80
.....1957	4	3,873	1,123,116	296.89
.....1958	5	4,322	1,160,000	268.39
.....1959	5	5,095	1,801,500	353.58
.....1960	6	5,863	1,864,500	318.01
British Columbia.....1956	5	6,563	652,500	99.42
.....1957	5	7,930	1,398,464	176.35
.....1958	5	9,311	1,487,000	159.70
.....1959	5	10,393	2,316,000	222.84
.....1960	5	11,289	2,355,000	208.61
Totals².....1956	78	43,570	5,526,500	126.84
.....1957	87	72,476	16,049,288	221.44
.....1958	91	80,596	16,558,000	205.44
.....1959	92	88,274	25,522,500	289.13
.....1960	95	96,374	26,112,000	270.94

¹ See text on p. 396 for basis of grant.

² Institutions in Quebec did not accept payment for the years 1952-53 to 1955-56. For 1956-57 and subsequent years, payments refused were held in trust by the National Conference of Canadian Universities. In 1957-58, one institution accepted the grant, and in 1958-59, two. For 1959-60 all eligible institutions were expected to accept.

During the 1956-57 academic year, plans were announced by the Federal Government for the distribution of \$50,000,000 to Canadian universities and colleges for new construction and capital equipment projects. The grants are made in an amount not exceeding 50 p.c. of the cost of specific building or capital equipment projects, with appropriate regard to the population of each province. The University Capital Grants Fund is administered by the Canada Council, which came into existence on Mar. 28, 1957. Up to Mar. 31, 1959, 31 institutions received a total of \$12,816,564 in capital grants. The Council was also endowed with an additional \$50,000,000 for the provision of scholarships and other assistance in the fields of the arts, humanities and social sciences. (See pp. 403-405.)

PART II.—CULTURAL ACTIVITIES RELATED TO EDUCATION

Section 1.—Art and Education*

Fine Art Schools, Galleries and Museums.—Fine art appears as an elective subject of the faculty of arts in a number of universities, where it may be taken as one of five, six or more subjects for a year or two. In Mount Allison University, N.B., and in the Universities of Saskatchewan and Manitoba, there is a sufficient number of courses to allow the taking of a Bachelor degree with specialization in fine art. At the University of Toronto an Honour B.A. in art history and archaeology is offered, as well as graduate work in this field. Departments of fine art were opened by McGill University in 1948-49, by the University of British Columbia in 1949-50 and by the University of Alberta in 1953-54; McMaster University reopened its department in 1951.

Confusion is often caused by the fact that some universities stress the history of art and others its practice. In 1958 the National Gallery sponsored a conference of university art departments, and a movement was begun towards the attainment of a proper ratio between the number of courses in history and in practice of art. A recommendation was also made for the establishment of a second centre of graduate studies (in addition to that at Toronto), preferably in Montreal.

There are also schools of art not requiring any fixed academic standing for admission, as they are more concerned with the technical development of the artist. The most widely known of these are:—

Nova Scotia College of Art, Halifax, N.S.

École des Beaux-Arts, Quebec, Que.

École des Beaux-Arts, Montreal, Que.

School of Art and Design, Montreal Museum of Fine Arts, Montreal, Que.

Ontario College of Art, Toronto, Ont.

University of Manitoba School of Art, Winnipeg, Man.

School of Art, Regina College, Regina, Sask.

Provincial Institute of Technology and Art, Banff School of Fine Arts,
Banff, Alta. (affiliated with the University of Alberta, Edmonton)

Vancouver School of Art, Vancouver, B.C.

Courses in these schools vary in length with the requirements of the individual student but may extend over as many as four years. Summer schools of art are sponsored by some of the foregoing institutions, by universities, and by various independent groups.

Public art galleries and museums in the principal cities perform valuable educational services among adults and children. Children's Saturday classes, conducted tours for school pupils and adults, radio talks, lectures and often concerts are features of the programs of the various galleries. Many of these institutions supply their surrounding areas with travelling exhibitions, and organizations such as the Maritime Art Association, the

* Revised under the direction of the Director of the National Gallery of Canada, Ottawa.

Western Canada Art Circuit, the Saskatchewan Arts Board and the Art Institute of Ontario have been founded to carry on the work on a regional basis. The National Gallery of Canada has a nation-wide program of this nature.

The principal art galleries and museums* are:—

Beaverbrook Gallery, Fredericton, N.B.
 New Brunswick Museum, Saint John, N.B.
 Museum of the Province of Quebec, Quebec, Que.
 Montreal Museum of Fine Arts, Montreal, Que.
 National Gallery of Canada, Ottawa, Ont.
 London Public Library and Art Museum, London, Ont.
 Art Gallery of Toronto, Toronto, Ont.
 Royal Ontario Museum, Toronto, Ont.
 Art Gallery of Hamilton, Hamilton, Ont.
 Winnipeg Art Gallery, Winnipeg, Man.
 Mackenzie Art Gallery, Regina, Sask.
 Calgary Allied Arts Centre, Calgary, Alta.
 Edmonton Art Gallery, Edmonton, Alta.
 Vancouver Art Gallery, Vancouver, B.C.
 Art Gallery of Greater Victoria, Victoria, B.C.

Other Art Organizations.—The leading art organizations of national scope, exclusive of museums and art galleries, include the following:—

Association of Canadian Industrial Designers
 Canadian Arts Council
 Canadian Group of Painters
 Canadian Guild of Potters
 Canadian Handicrafts Guild
 Canadian Museums Association
 Canadian Society of Graphic Art
 Canadian Society of Painter-Etchers and Engravers
 Canadian Society of Painters in Water Colour
 Canadian Society of Landscape Architects and Townplanners
 Community Planning Association of Canada
 Federation of Canadian Artists
 Royal Canadian Academy of Arts
 Royal Architectural Institute of Canada
 Sculptors Society of Canada.

The National Gallery of Canada.—The National Gallery was founded in 1880 by the Marquis of Lorne, then Governor General of Canada, and at first served only as an exhibition gallery. In 1907 it was provided with an Advisory Arts Council and in 1913 was first incorporated under a Board of Trustees. Since then it has assembled a permanent collection of pictures and sculpture, prints and drawings, representing the styles, past and present, of various parts of the world, intended for the enjoyment of the public and the improvement of arts and industrial products, and to form the basis of a program of art education. The National Gallery Act, amended in 1951, gave the institution a larger Board of Trustees and other advantages.

The collection of the National Gallery today is of international repute and is accessible to the whole country by means of catalogues, photographs, colour reproductions and, to a limited extent, by loans. The Canadian section, naturally the most inclusive, is the best available source for the study of Canadian art. Each year, examples of the best contemporary work are added, along with those of earlier periods.

The National Gallery conducts a program of extension work throughout the country. The majority of its special exhibitions are available to the entire country and are widely circulated. About 30 such exhibitions are toured and as many as 200 separate showings have been held annually under the auspices of the National Gallery of Canada. In addition, individual loans of material from the collection are made to centres in many parts of the country each year. In this way original works of art are constantly being brought to the attention of the public. Sets of reproductions are also sent on tour of localities that have not the facilities for handling originals.

* A complete list of Canadian art museums, societies and schools is included in the Canadian section of the current issue of the *American Art Directory* (R. R. Bowker Co., New York).

An Industrial Design Division has been set up as the result of public interest in bringing the design of Canadian goods up to the best international standards and in fostering distinctive Canadian designs. The Design Centre, operated as part of the National Gallery, serves as an exhibition centre and as headquarters for the national program in industrial design. Exhibitions have been held in various parts of the country.

Other methods of education in the arts apply more specifically to young people and are designed, in part, to supplement regular school work. The Gallery provides written lectures illustrated by lantern slides on all aspects of art history, reproductions of paintings with introductory texts for art appreciation, school broadcasts, classes for school children at the Gallery, exhibitions of children's art, conducted tours of the Gallery's collections and educational demonstrations. Lecture tours by well known authorities are also held throughout Canada. The National Gallery also maintains a library of art films. The facsimile colour reproductions published by the National Gallery are listed in a leaflet, available on request.

The *Report of the Royal Commission on National Development in the Arts, Letters and Sciences* made recommendations for the extension and improvement of the Gallery's exhibition and education services; increases in funds, staff and facilities; maintenance or increase of appropriations for acquisitions; and a new building containing adequate facilities for display, storage, circulation of exhibitions and conservation of paintings. These recommendations have been carried out and the National Gallery, together with the Design Centre, is now housed in the new Lorne Building constructed in 1959. The building is located in central Ottawa easily accessible to residents and visitors. Details concerning recent purchases, exhibitions and lecture tours arranged by the National Gallery are contained in the *Annual Report of the Board of Trustees*.

Section 2.—The Educational and Cultural Functions of the National Film Board

The National Film Board, an agency of the Federal Government, was established by Act of Parliament in 1939 and reconstituted by the National Film Act in 1950. In the years since its establishment, the Board has grown from a supervisory body over Canadian Government motion picture activities to a national documentary film-producing and -distributing organization whose films about Canada are seen wherever people may freely assemble. The Board also produces and distributes filmstrips and still photos on Canadian themes in accordance with its primary function outlined in the Act "to initiate and promote the production and distribution of films in the national interest". Films are produced primarily in the English and French languages and, whenever possible, foreign language versions are prepared to increase the usefulness of Board films in foreign countries.

The 16mm. community film program in Canada is based on a nation-wide system of film circuits, film councils and libraries, strongly supported by organizations and individuals engaged in community activities. At present, there are more than 600 national, provincial and community film distribution outlets from which thousands of 16mm. prints are available for public use throughout the country. These prints are acquired for circulation by purchase or by loan from the Board.

More than one-half of the 16mm. community film audience recorded by the Board during the year was reached through classroom showings, indicating further progress in the development of audio-visual aid programs in Canadian schools and universities. Another noticeable trend was the more selective use of films by community organizations and groups for particular purposes. This is attributed in part to the availability of Board productions which present series of film studies related to central themes, and to the availability of a broad range of topics which include individual films particularly suited to group objectives and programs. For example, a series of thirteen films, *The Commonwealth of Nations*, which examined the history and development of the Commonwealth, was given wide promotion and circulation among Canadian schools and study groups following its initial showing over English and French television networks.

Films produced by the Board are shown in commercial theatres and on television in Canada and abroad. Theatrically, films are released domestically in the series *Canada Carries On* and *Eye Witness* (*En Avant Canada* and *Coup d'Oeil* in French), and newsreel features are also issued regularly for theatrical and television purposes. Distribution of theatrical subjects is arranged by contract with commercial distributing organizations.

An increasing proportion of the Board's production and distribution program is initially concerned with television at home and abroad. Series of original films are shown regularly over English and French language television networks in Canada. Individual films from the Board's extensive general library are available to CBC and privately operated stations. Abroad, because of expanding television facilities in many countries, Board films are seen by audiences which could not otherwise be reached.

In addition to commercial distribution through theatres and television in other countries, 16mm. print circulation is carried on through posts of the Departments of External Affairs and Trade and Commerce, through National Film Board territorial offices at London in England, New York and Chicago in the United States, and New Delhi in India, as well as through libraries operated by various education agencies. Hundreds of prints of National Film Board films are also sold in other countries each year. Exchange agreements are in effect between the Board and government film-producing organizations in other lands; this means that films of various nations are freely exchanged with Canada, aiding better international understanding.

The National Film Board maintains a library of more than 150,000 still photographs, which are available at nominal cost to magazines, newspapers and other periodicals wishing to present current information about Canada.

Section 3.—The Educational and Cultural Functions of the Canadian Broadcasting Corporation

Many hours of educational or semi-educational programs are broadcast annually by the Canadian Broadcasting Corporation in English and in French. Whether these programs are directed to children or adults, entertainment is combined with information whenever possible. Spoken-word programs cover a very wide range of interests and are presented as readings, talks, discussions, documentary programs, dramatizations or in forms combined with music.

Pre-school Broadcasts.—Though many story programs for pre-school-age children are broadcast purely as entertainment, a special series has been developed to give young children, particularly in remote areas, many of the benefits of kindergarten training. This series, *Kindergarten of the Air*, is broadcast Monday to Friday for children from three and a half to six years of age. Planned with the advice of kindergarten experts, it includes stories, songs, simple games and development exercises, and encourages good habits of hygiene, eating and relaxation. Another similar series entitled *Nursery School Time* was begun as an experiment in 1958. It was enthusiastically received and, as a consequence, was given a regular place in the CBC national network schedule. Produced on alternate days from Toronto and Montreal, *Nursery School Time* is planned by experts in the training of three-and-a-half to five-year-old children.

During the spring of 1959 an experiment was begun in the use of television to teach a second language to pre-school-age children. A ten-minute segment of the adult program *Speaking French* was provided for this purpose. The results justified the establishment of a self-contained program called *Chez Hélène* which utilizes the Tan-Gau method of language instruction. It is presented daily on the CBC national television network.

School Broadcasts.—In an average school year, more than 1,000 school programs, mostly in dramatized form, are broadcast to all parts of Canada. The CBC provides facilities for 30-minute daily programs specifically planned by departments of education to meet classroom requirements. These are aids to help teachers stimulate student

imagination and strengthen motives for study. The National School Broadcasts series are planned by the National Advisory Council on School Broadcasting to promote among students a stronger consciousness of Canada and its achievements. During the 1958-59 season, programs for students in grades 4 to 13 were presented in eight sub-series. The perennial favourite for students in grades 4 to 6, *Voices of the Wild*, was again presented. Other series were: *They Explored Canada*, dramatized accounts of Canadian explorers; *Going My Way*, the story of transportation in Canada told for grade 4 to 6 students; *Macbeth*, a radio version of the Shakespearean play in five instalments for high school students; *Music in the Making*, a music appreciation series for grades 6 to 10 in which radio drama and a symphony orchestra were combined to heighten the students' appreciation of Handel's music; *Life in Canada Today*, actuality visits to Canadians at work; *Commonwealth Roundup*, radio visits to people living in other Commonwealth nations; and *What's In the News*, a weekly up-to-the-minute commentary on outstanding news events.

Over the past several years the CBC, acting on the advice of the National Advisory Council on School Broadcasting, carried out a number of nation-wide experiments in the use of television as a classroom teaching aid. These were supplemented by local experiments carried out by municipal boards of education and provincial departments of education. All experiments were carefully evaluated by classroom teachers and education officials and the results indicated that television had a useful function in the classroom as a supplement to the work of the teacher. The CBC therefore agreed to present a national series of 26 school telecasts during the first three months of 1960. *Rhythm and Melody* for grades 2 and 3 was planned to provide a stimulus in developing the child's enjoyment of music. *Child Life in Other Lands*, for the same grades, supplemented the teaching of social studies by giving the child visual experience with the people he was studying. A series for grades 4 to 6 called *The Face of Canada* dealt with the geography of Canada and a second series for this group, *Science About Us*, was planned to stimulate the child's curiosity about the wonders of the everyday world around him. For grades 7 to 9, a series of 10-minute programs gave current news topics and a series of 20-minute programs was conducted on Canadian history; the latter series, *Where History Was Made*, took the child, through the camera's eye, to sites of great events in Canada's history and gave him a vivid picture of life at these places at the time the event occurred.

During 1959 the Province of Manitoba, in co-operation with the CBC, conducted a series of school telecasts for that province. The Toronto Board of Education plans to present a series of school telecasts in 1960 through the CBC facilities in Toronto, and the Provinces of Manitoba, Saskatchewan, Alberta and British Columbia are jointly planning school telecasts for schools in those provinces, also in co-operation with the CBC.

Adult Education.—Programs of an adult education nature are presented frequently by the CBC on its radio and television services, in the planning of which co-operation is received from various educational organizations. The CBC is an active participant in the work of the Joint Planning Commission, a body established by the Canadian Association for Adult Education for exchange of information and co-ordination of plans for adult education in Canada.

Citizens' Forum, a series telecast for the past four years, is a round-table program on which a panel of informed speakers who hold varying viewpoints discuss important issues of the day. It is arranged jointly by the Canadian Association for Adult Education and the CBC. Its French counterpart, *Les idées en marche*, which is carried on television (on radio its equivalent is *Des idées et des hommes*), is planned in co-operation with La Société canadienne d'éducation des adultes. Similar types of programs prepared especially for rural listeners are *National Farm Radio Forum* and *Le réveil rural* and *Le choc des idées*, arranged by the CBC in co-operation with the Canadian Federation of Agriculture and the Canadian Association for Adult Education. All these forum programs are heard by organized listening groups, which continue the discussion of the topic at the conclusion of the program.

For the past eight summers the evening sessions of the Couchiching Conference have been broadcast. This week-long conference, organized jointly with the Canadian Institute on Public Affairs, examines Canadian and international affairs in open meetings and group discussions. On the French TV and radio networks, annual sessions of *L'Institut canadien des affaires publiques* are carried. Other programs of an educational nature are *Soundings*, a series of radio documentaries dealing with community and social affairs; various dramatized series in the field of human relations and mental health; *Science Review*, which examines important discoveries in the field of the natural sciences and their branches; *Business Barometer*, designed to inform listeners of developments in Canada's economic life; *Anthology*, a literary program with emphasis on Canadian writers; *Trans-Canada Matinée*, a daily afternoon program including informative talks and commentaries designed especially for the woman in the home; *University of the Air*, a series varying from four to eight talks prepared and broadcast by distinguished professors in their specialized fields; and, on the French radio network, *L'Université radiophonique internationale*, a series of talks exchanged with other countries on cultural and scientific subjects.

On the French network *Les Chansons de la maison* presents a series of programs relating to parents and children; and general questions sent in by parents are answered by psychologists. For women listeners, the daytime program *Femina* is presented five times a week. The French network also broadcasts a number of weekly programs dealing with fine arts, music, literature, theatrical arts, sciences, religion and philosophy, under the auspices of *Le Service des émissions éducatives et d'affaires publiques*.

In addition to *Citizens' Forum*, programs carried regularly on both radio and television are *Press Conference*, in which people who make the news are questioned by those who report it; and *Fighting Words*, in which guest experts in various fields discuss controversial quotations sent in by viewers. The French network equivalent of *Press Conference* is *Tribune libre*. *Open House*, a daily program for women, presents information on a wide variety of commodities and services, and interviews with people of note; its French network equivalent is *Bonjour Madame*. Significant issues, events and ideas, both international and domestic, are considered each Sunday on *Background*. *Explorations*, a series of drama documentaries which examines questions in the fields of sociology and the natural sciences, was one of seven CBC programs to win First Awards at the Exhibition of Educational Radio and Television Programs at Columbus, Ohio. Programs in the field of parent education and mental health are also broadcast. Portions of afternoon sessions of the Winter Conference of the Canadian Institute on Public Affairs were telecast. This three-day weekend conference examined sociological questions in open meetings and group discussions. On the French network *Affaires de famille* considers topics and problems of interest to teenagers.

Section 4.—The Canada Council

On Feb. 15, 1957, the House of Commons passed an Act for the Establishment of a Canada Council for the Encouragement of the Arts, Humanities and Social Sciences. The continuing objects of this body are to foster and promote the study and enjoyment of, and the production of works in, the arts, humanities and social sciences. The expression, "the arts" is defined by the Canada Council Act as: architecture, the arts of the theatre, literature, music, painting, sculpture, the graphic arts, and other similar creative and interpretative activities. The Council, in furtherance of its objects, may (a) assist, co-operate with and enlist the aid of organizations, the objects of which are similar to any of the objects of the Council; (b) provide a scheme of scholarships, fellowships and other grants to persons in Canada for study or research in the arts, humanities and social sciences in Canada or elsewhere, and to persons in other countries for study and research in the same subjects in Canada; (c) make awards to persons in Canada for outstanding accomplishment in the arts, humanities and social sciences; (d) arrange for and sponsor exhibitions, performances and publications of works in the arts, humanities and social sciences; (e) exchange with other organizations or persons and with other countries knowledge and information respecting the arts, humanities and social sciences; (f) arrange for

representation and interpretation of Canadian arts, humanities and social sciences in other countries. In addition, the Canada Council may be assigned by the Governor in Council such functions and duties in relation to the United Nations Educational, Scientific and Cultural Organizations (UNESCO) as he considers desirable.

The Council is a corporation consisting of a Chairman, a Vice-Chairman and nineteen other members, all appointed by the Governor in Council. The Chairman and Vice-Chairman are appointed for terms not exceeding five years and the other members for terms of three years each. After serving two terms, members of the Council, including the Chairman and Vice-Chairman, are not eligible for re-appointment during the twelve months following completion of the second term. The principal officers of the organization are the Director and the Associate Director, also appointed by the Governor in Council, the Treasurer, the Secretary, the Supervisor of the Arts Programme and the Supervisor of the Scholarship Programme. The Council is not an agent of the Crown, but its officers and employees are considered to be employed in the Public Service for the purposes of the Public Service Superannuation Act. The Council is deemed to be a charitable organization in Canada.

The continuing work of the Council will be financed by income from a permanent Endowment Fund of \$50,000,000 and by a University Capital Grants Fund of \$50,000,000, both to be paid out of the Consolidated Revenue Fund. The latter Fund and the income it earns will be completely expended by the Council over an unspecified but presumably short period of years. This Fund will enable the Council to make grants to universities and other institutions of higher learning by way of capital assistance in respect of building projects, with the following limitations: (a) a grant for any one project may not exceed one-half the total expenditures made in respect of that project; (b) in any province the aggregate of the grants made may not exceed an amount that is in the same proportion to the aggregate amount credited to the University Capital Grants Fund as the population of the province (latest census) is to the aggregate population of the provinces in which there is a university or other similar institution of higher learning. The Canada Council is also permitted to expend and administer any gifts and bequests it may receive.

To aid and advise the Council in making, managing and disposing of investments under the Canada Council Act, an Investment Committee has been set up consisting of the Chairman of the Council, one other member of the Council designated by the Council, and three members appointed by the Governor in Council. Proceeds from the sale or other disposition of any investments made out of the Endowment Fund or the University Capital Grants Fund are credited to the Fund out of which the investment was made. Investments out of money standing to the credit of the University Capital Grants Fund are made only in bonds or other securities of, or guaranteed by, the Government of Canada.

The Governor in Council appoints a member of the Queen's Privy Council for Canada to whom at the end of each fiscal year the Chairman reports all proceedings under the Canada Council Act for that fiscal year, including the financial statements of the Council and the Auditor General's report thereon. Provision is made for a review of these reports by Parliament.

During its second year of operations ended Mar. 31, 1959, the Council provided for or authorized awards as follows: scholarships, fellowships and other awards for 571 persons in the amount of \$1,215,000 of which about 75 p.c. were in the humanities and social sciences; grants to organizations representing the arts, humanities and social sciences, \$1,436,591, of which the larger portion was for the arts; grants for capital assistance to universities in respect of building construction projects, \$8,732,264.

Income from the Endowment Fund for the year ended Mar. 31, 1959, was \$2,758,760. Administrative expenses (including those occasioned by the University Capital Grants Fund, the UNESCO program and the purchase of equipment) were \$294,458. Total expenditures from the Endowment Fund were \$2,960,757, thereby reducing the surplus carried over from the first year of partial operations by \$201,997. To Mar. 31, 1959, the Council authorized expenditures from the University Capital Grants Fund and the Endowment Fund amounting to \$17,302,269.

In accordance with Order in Council dated June 14, 1957, the Council established the National Commission for UNESCO and named 26 members and 30 organizations with "co-operating body status".

Section 5.—Library Services

The National Library.—The National Library of Canada, authorized by the National Library Act of June 18, 1952 (RSC 1952, c. 330), came into existence formally on Jan. 1, 1953. The Act provides for the establishment of an Advisory Council of 15 members, including at least one representative from each of the ten provinces together with the appointment of a National Librarian, an Assistant Librarian and other personnel. The duties of the National Librarian include the establishment of a National Union Catalogue listing the books in every important collection in Canada; the purchasing of book stock; and the publication of a National Bibliography listing books published in Canada, written by Canadians, or of special interest to Canadians.

Since its establishment, the Library has continued to expand its activities in temporary quarters while awaiting the erection of a new building. The first stage of the *National Union Catalogue*, which lists the holdings of larger public reference, government, university and special libraries, was completed in November 1958. Included were data covering two libraries in Newfoundland, two in Prince Edward Island, 19 in Nova Scotia, 5 in New Brunswick, 14 in Quebec, 73 in Ontario, 4 in Manitoba, 3 in Saskatchewan, 4 in Alberta and 10 in British Columbia. Statistics on interlibrary loans facilitated by the Catalogue demonstrate its usefulness to scholars and research workers across the country. Approximately 1,000 requests are being filled each month, about half of which are received from university libraries, one-quarter from public libraries and the remainder from special libraries and other sources. *Canadiana*, issued monthly, provides an up-to-date inclusive bibliography of materials of Canadian origin and interest for the use of libraries, the publishing trade and others. Altogether, 9,230 items were listed in 1959.

In addition to Canadian books, the National Library is acquiring material in other subject fields, especially in the humanities, music and the social sciences.

Public Libraries.—Library service is provided for the Canadian public through several types of organization, depending on the population density of the area.

The majority of Canadians live in urban municipalities and are served by free tax-supported libraries, some with extensive branch systems. A few of the larger centres and many of the smaller municipalities are served by non-profit association public libraries, privately controlled and operated. A wide range of special services, from reference collections for business and industry, reading clubs, lecture series, art displays and services to schools supplement the basic reference and circulation collections for children and adults in these larger centres.

Regional and co-operative libraries are organized in all provinces except Quebec to centralize and strengthen the efforts of small communities to provide adequate library service for their people. Quebec late in 1959 introduced legislation providing for a study of public library needs in the province with a view to regional library organization. Regional libraries in Canada have pioneered in the use of mobile libraries to bring books to suburban and rural communities and to small libraries in need of replenishment.

Provincial public library services, operated on a province-wide basis by provincial government authorities, serve sparsely populated areas by rail, boat and aircraft. Traveling libraries, consisting of boxed collections of books for all ages, are sent out to small groups on request, books dealing with specific subjects are sent out to individuals on request and other forms of library service are tailored to the needs of certain areas. In Ontario the provincial government operates and finances a public library service at Moose Factory which is intended to be the beginning of service to the whole James Bay area. In Quebec, the McLennan Travelling Library at Macdonald College, financed through endowment and the provincial government, brings books by bookmobile to seven small communities in the Eastern Townships, and also distributes travelling collections. In British Columbia, the Provincial Library Commission maintains three branch depots in remote areas to service small local libraries.

All public libraries in Canada are experiencing increased demands for their services, especially from children of five to 14 years of age who, representing 20 p.c. of the population, borrowed 46 p.c. of all the books circulated in 1957. Stocks of books, pamphlets and periodicals are increasing, and new buildings, extensions and remodellings are being planned, although expansion is limited by a shortage of professional librarians.

DBS surveys of libraries for the year 1958 covered provincial public library services, regional and co-operative libraries and public libraries in centres with over 10,000 population. The data thus secured was supplemented by information from provincial officials on libraries in smaller centres. Table 1 represents estimates for all public libraries in Canada.

1.—Summary Statistics for All Public Libraries, 1958

Province and Service	Population in Area Served (Census 1956) ¹	Libraries	Stocks of Books, Periodicals and Pamphlets	Circulation	Current Operating Payments	Full- Time Staff
	No.	No.	No.	No.	\$	No.
Newfoundland—						
Provincial.....	415,000	1	269,037	..	131,465	29
Prince Edward Island—						
Provincial.....	100,000	1	102,030	195,625	40,212	7
Municipal.....	16,707	1	23,307	53,114	15,937	4
Nova Scotia—						
Regional.....	351,589	5	236,890	1,364,344	306,168	56
Municipal.....	55,810	3	26,474	89,033	7,269	3
New Brunswick—						
Provincial.....	..	1	19,960	49,495	..	7
Regional.....	40,000	1	29,360	108,494	25,482	5
Municipal.....	144,425	3	117,126	370,108	103,372	19
Quebec—						
Provincial.....	100,000	3	281,841	128,204	130,401	30
Municipal and Association.....	1,945,964	45	1,439,599	2,789,277	1,038,786	188
Ontario—						
Provincial.....	408,488	1	70,500	75,000	52,400	7
Co-operative and Regional.....	1,055,634	15	321,766	2,049,937	280,603	36
Municipal and Association.....	4,040,811	489	6,355,396	23,552,156	6,732,051	1,111
Manitoba—						
Provincial.....	270,000	1	30,000	90,000	45,075	8
Regional.....	5,400	2	5,569	11,730	16,294	2
Municipal and Association.....	416,079	10	305,922	1,735,933	508,973	82
Saskatchewan—						
Provincial.....	508,029	1	100,300	128,822	106,012	22
Regional.....	51,007	1	51,674	123,396	76,115	5
Municipal and Association.....	329,629	75	407,671	1,530,295	533,433	83
Alberta—						
Provincial.....	500,000	1	49,659	152,410	55,057	12
Regional.....	24,000	2	41,882	121,322	22,559	3
Municipal and Association.....	638,578	145	716,484	2,740,365	834,798	151
British Columbia—						
Provincial.....	260,000	1	170,975	233,289	152,083	29
Regional.....	346,369	3	306,566	1,910,091	343,425	42
Municipal and Association.....	836,890	48	946,324	5,711,147	1,778,733	317
Yukon and Northwest Territories— ²						
Association.....	9,376	7	22,840	15,466	2,820	—
Totals, Provincial.....	2,561,517	11	1,094,302	1,052,845	712,705	151
Totals, Regional and Co-operative...	1,873,999	29	993,707	5,689,314	1,670,646	149
Totals, Municipal and Association...	8,434,269	826	10,361,143	38,586,894	11,551,172	1,958
Grand Totals, 1958.....	12,853,078³	866	12,449,152	45,329,053	13,334,523	2,258
Grand Totals, 1957.....	12,423,981	870	11,328,188	41,939,109	12,359,540	2,067

¹ For total population in each province, see p. 174.

² 1956 figures.

³ Excludes duplication.

Academic Libraries.—DBS surveys for the academic years 1957-58 and 1958-59 included all university and college libraries serving full-time student enrolments at the university level of 500 or more. Student enrolment in the 32 institutions in this category accounted for more than 90 p.c. of the total enrolment in all Canadian universities and colleges. Table 2 contains preliminary data for 1958-59 with comparative totals for the same group for the previous year. University library facilities are being expanded to meet rising enrolment, which increased 15.4 p.c. in the institutions under survey from 1957-58 to 1958-59. Many new library buildings and extensions, financed by the Canada Council, private benefactors and community organizations, are appearing on the campuses.

2.—Summary Statistics for University and College Libraries, Academic Year 1958-59

Province	University Libraries Reporting	Full-Time Students Served		Books, Periodicals and Pamphlets	Full-Time Staff	Total Operating Expenses	Library Expenditure per Full-Time Student
		Under-graduate	Graduate				
	No.	No.	No.	No.	No.	\$	\$
Newfoundland.....	1	1,059	21	49,512	4	60,391	55.92
Nova Scotia.....	3	3,652	121	324,758	23	177,781	47.12
New Brunswick.....	2	2,534	77	183,188	23	127,602	48.87
Quebec.....	7	24,798	1,589	1,794,423	168	768,878	29.14
Ontario.....	13	23,645	2,654	2,455,199	271	1,651,235	62.79
Manitoba.....	2	5,020	197	315,107	38	219,372	42.05
Saskatchewan.....	1	3,811	150	175,100	30	182,523	46.08
Alberta.....	1	5,441	358	216,117	40	257,257	44.36
British Columbia.....	2	10,214	571	476,855	91	556,057	51.56
Totals, 1958-59.....	32	80,174	5,738	5,990,259	688	4,001,096	46.57
Totals, 1957-58.....	33	70,393	4,038	5,781,678	635	3,435,749	46.77

Salaries of Professional Library Employees.—Public libraries in urban centres with over 10,000 population, regional public libraries, provincial public library services and university libraries employ most of the professional librarians in the country. Median salaries, by position, are given in Table 3, based on reports from these libraries for the calendar year 1958 and the academic year 1958-59.

3.—Median Salaries of Librarians in Professional Positions, 1958-59

Position	Public Libraries in Centres over 10,000 Population	Regional and Co-operative Public Libraries	Provincial Public Library Services	University and College Libraries	Total Professional Librarians
	\$	\$	\$	\$	No.
Chief Librarian.....	5,068	4,650	5,750	8,000	159
Assistant Chief Librarian.....	4,594	4,125	5,000	5,750	76
Division, Department or Branch Head.....	4,740	4,000	3,750	4,788	378
General Librarian.....	3,682	3,227	--	3,675	753

Section 6.—Canada and the United Nations Educational, Scientific and Cultural Organization

In the words of its constitution, the purpose of the United Nations Educational, Scientific and Cultural Organization (UNESCO) is "to contribute to peace and security by promoting collaboration among the nations through education, science and culture in order to further universal respect for justice, for the rule of law, for human rights and fundamental freedoms".

Total membership in the Organization includes 81 States and six associate members. The Organization is made up of three principal organs—the General Conference, the Executive Board, and the Secretariat. The General Conference is the policy-making body. It meets every two years and its main functions are to consider applications for membership, elect the Executive Board, plan the program and approve the budget for the ensuing two-year period.

In accordance with resolutions adopted at the 1956 General Conference held in New Delhi, India, UNESCO is now working actively on three major projects: the extension of primary education in Latin America; scientific research on arid lands; and the mutual appreciation of the cultural values of the Occident and the Orient. The tenth session of the General Conference held in Paris in November 1958 adopted plans to further these projects and to carry out other activities in UNESCO's program areas of education, natural sciences, social sciences, cultural activities, mass communications, technical assistance and exchange of persons. The Organization's budget for 1960 is approximately \$13,000,000. At the Canadian assessment level of 2.94 p.c., Canada's contribution for the period is in the neighbourhood of \$380,000.

In Canada, the Department of External Affairs discharges the responsibilities arising from membership in an international intergovernmental organization. It has the advice and assistance of the Canadian National Commission for UNESCO which was established by the Canada Council in August 1957. The National Commission is the agency responsible for co-ordinating Canadian participation in UNESCO's program both at home and abroad. Twenty-eight representatives of voluntary organizations and public bodies constitute the formal membership of the Commission. Part of this membership is chosen on a rotating basis, biennially, from a group of some 50 national voluntary organizations associated with the Commission as "co-operating bodies". The National Commission also has a number of consulting members who represent government agencies. Its first annual meeting and national conference was held in Montreal in March 1959. The Commission's secretariat is located in Ottawa at the Headquarters of the Canada Council.

PART III.—SCIENTIFIC AND INDUSTRIAL RESEARCH

Section 1.—The National Research Council*

History and Organization.—Organized research in Canada on a national basis dates from 1916 when the Government of Canada established the Honorary Advisory Council for Scientific and Industrial Research under a Committee of the Privy Council. Provision was made for the planning and integration of research work, organization of co-operative investigations, postgraduate training of research workers, and prosecution of research through grants-in-aid to university professors. This was the basis of the Council's work from 1916 to 1924.

A Special Committee of Parliament, appointed to study a recommendation for establishing national laboratories, endorsed the proposal and the Research Council Act was revised by Parliament in 1924. Temporary laboratories were secured and research on utilization of magnesians limestone for refractories was carried out so successfully that a wartime industry, established during World War I, was re-established on a large scale. As a result of this achievement the Government, in 1929-30, provided funds for new laboratories.

The National Research Building on Sussex Drive, Ottawa, was opened in 1932, and in 1939 construction was begun of the aerodynamics building on a 130-acre site on the Montreal Road just east of the city. Later, other buildings were erected on this site, including woodworking and metalworking shops and separate laboratories for research

* Prepared by R. A. Lay, Public Relations Office, National Research Council of Canada, Ottawa.

on engines, gas and oil, hydraulics and structures. These facilities have since been enlarged and extended and new buildings have been provided for engineering, low-temperature studies, and high-speed aerodynamics. In 1952 a cosmic ray laboratory, a thermodynamics building, and a large structure to house the Division of Applied Chemistry were added; in 1953 the Building Research Centre was completed. The same year, development began on a new 250-acre site on the opposite side of the road, where headquarters for the Radio and Electrical Engineering Division was constructed. In 1958, a unique Fire Research Laboratory was added to this site as part of the facilities of the Division of Building Research. An underpass connects the two areas.

A Prairie Regional Laboratory built on the University of Saskatchewan campus has been in operation since June 1948 and an Atlantic Regional Laboratory, on the campus of Dalhousie University at Halifax, N.S., was opened in June 1952. The Division of Building Research has established one of the most northerly building research stations in the world at Norman Wells, N.W.T. Completing its long-term plan for regional activities, the Division has also established a small Pacific Regional Station at Vancouver, in co-operation with the British Columbia Research Council.

The National Research Council consists of the President, two Vice-Presidents (Scientific), one Vice-President (Administration) and 17 other members, each of the latter group being appointed for a term of three years and chosen to represent industry, labour, or research in one of the basic natural sciences. Many of the members are drawn from the science departments of Canadian universities.

The Council's scientific and engineering activities are organized in ten divisions and two regional laboratories, each with its own director. Five laboratory divisions are concerned with fundamental and applied studies in the natural sciences—applied biology, applied and pure chemistry, and applied and pure physics. Four others are devoted chiefly to engineering work—building research, mechanical engineering, the National Aeronautical Establishment, and radio and electrical engineering. The Division of Medical Research has no laboratories but awards grants-in-aid and fellowships tenable chiefly in the medical schools of Canadian universities (see pp. 414 and 427-429).

Links with Industry.—In addition to its basic research foundations, the Council operates a Technical Information Service. Through a trained research staff, using the extensive library facilities available to the Council, it is usually possible to provide any required information at very short notice. A free and constant flow of personnel and information is maintained between the Council laboratories and industrial laboratories, the aim being to have Canadian industry use the Council's laboratories just as the units of a large company use their own laboratories as a source of scientific information and assistance. The Council also undertakes for any firm, under contract, research problems that cannot be solved by private consulting and testing laboratories and, in return, obtains assistance from many companies. The Council has long-standing and intimate contacts of this co-operative kind with many Canadian industries in various fields.

Associate committees were established by the National Research Council early in its history and have been continued to date. Hundreds of specialists have accepted invitations from the Council to serve on committees and have brought their knowledge and experience to bear on the solution of research problems put before them. Members of committees give their time and effort to these special studies without charge and their assistance is a source of great strength to the Council.

Foundation Aspects.—Assisted research grants have been made by the Council since its inception in 1916. These awards are given to heads of university science departments to purchase needed equipment and to employ junior helpers, usually students. Aid of this kind has been of considerable assistance in enabling the universities to put into operation the excellent graduate schools that now exist in Canada. In the year ended Mar. 31, 1960, more than \$8,200,000 was provided out of Council funds for basic research at Canadian universities.

Scholarships and grants-in-aid of research are awarded annually by the National Research Council. Scholarships awarded in science and engineering include Bursaries and Studentships with values of \$1,800 and \$2,200 respectively, Special Scholarships valued at \$2,200, and Postdoctorate Overseas Fellowships at \$2,700 (single) and \$3,500 (married). The Council also offers Graduate Medical Research Fellowships valued at from \$3,000 to \$5,000 depending upon academic qualifications and research experience. A limited number of Medical Research Associates and Postdoctoral Medical Research Assistants are also appointed to research positions in the medical schools of Canadian universities. Graduate Dental Research Fellowships are also available. In the year ended Mar. 31, 1960, 474 of these different awards totalling more than \$1,500,000 were made.

Since 1948, the National Research Council has awarded Postdoctorate Fellowships in open competition to Canadians and nationals of other countries, which are tenable in the Council's own laboratories. The diversity of training and experience brought to the laboratories by these keen young scientists has had such a stimulating effect on the research effort that the program has been expanded in recent years; Fellowships are also tenable in the science departments of Canadian universities, in the laboratories of Atomic Energy of Canada Limited, and in the Federal Departments of Agriculture, Mines and Technical Surveys, and National Health and Welfare. More than 200 of these awards are being held at the present time (March 1960), mostly in the fields of chemistry, physics and biology.

Principal Activities in 1958-59

The activities of each Division are described in outline only, with occasional brief examples. The work of the Atlantic and Prairie Regional Laboratories is treated separately at pp. 414-415.

Applied Biology.—This Division's work includes applied investigations related to the national economy, and fundamental studies in microbiology, biochemistry and biophysics as a basis for future application in agriculture, medicine or industry.

Problems of preparation, preservation and storage of food constitute a large part of the Divisional work. Specific studies in 1958-59 involved changes effected in foods during freezing and frozen storage, insulation and cooling of railway refrigerator cars, aeration of fermentations, controlled atmosphere storage of fruit, the processing and storage of milk, effects of irradiation on fats, and tenderness of meat.

Statistical investigation of variability of protein content in shipments of Northern wheat was expanded, and computation continued in a long-range study of the correlation between wheat protein and rainfall and temperature in the Prairie Provinces. The physiological and biochemical changes in mammals, birds and man in adapting to cold are being investigated, as are the structure and function of plant cells, problems of photosynthesis and translocation in plants, the structural determination of chlorophyll, and blue-green algae implicated in sheep and cattle deaths.

Other work involves the preparation, chemistry and physical chemistry of proteins and lipoproteins, the composition and structure of carbohydrates and fats, and studies concerning micro-organisms related to the preparation, preservation and spoilage of food. A culture collection of about 3,000 yeasts, bacteria and fungi is maintained.

Applied Chemistry.—The Division of Applied Chemistry is concerned with supplying new scientific information for the development of Canada's natural resources and chemical industries. Although formerly much of the work involved solving immediate, specific problems, a larger part of the Divisional effort is now being devoted to more basic studies. This avoids conflict with industrial laboratories and consultants and, in addition to providing fundamental information, often produces practical results. For instance, recent studies in applied catalysis (the study of agents altering the speed of chemical reactions) also explained certain types of smog formation.

The eleven sections of the Division are: analytical chemistry, applied catalysis, applied physical chemistry, chemical engineering, colloid chemistry, corrosion, high polymer chemistry, metallurgical chemistry, physical organic chemistry, rubber and textiles. Much of the work falls under the general headings of petroleum or corrosion chemistry, in that several sections work on topics related to one of these fields.

A current project of both military and industrial significance is the use of lignin as a rubber reinforcing agent. Whereas carbon black had hitherto been regarded as the only suitable reinforcing agent, it has been shown that lignin is an extremely satisfactory, domestic, non-strategic alternative. In fact, enough lignin can be produced as a by-product of Canada's pulp industry to replace all the carbon black now used in North America—about 554,000 long tons annually.

Pure Chemistry.—The Division of Pure Chemistry is organized around a nucleus of outstanding Canadian chemists who direct about 50 young postdoctorate Fellows from all over the world. The work consists of long-term fundamental investigations in physical and organic chemistry.

The work in organic chemistry includes investigation of the structures of alkaloids, studies of the infrared spectra of steroids, the synthesis of porphyrins and of compounds labelled with isotopes. Other sections deal with chemical kinetics and photochemistry, the study of the ionization potentials of free radicals by mass spectrometry, Raman and infrared vibrational spectroscopy, and the application of high resolution proton magnetic resonance techniques to the study of hydrogen bonding and other molecular interactions. Still others study certain aspects of surface chemistry such as the thermal properties of simple solids and imperfections in the bulk and the surface of alkali halide crystals, the heats of micellization by microcalorimetry, and the thermodynamics and stress-strain relationships associated with the absorption of fluids by active carbons. There is also a small group interested in the chemistry of fats and oils, and one engaged in fibre research.

Applied Physics.—The work in Applied Physics is divided between research projects likely to be of practical value and the continual development of the fundamental standards on which measurements generally are based. All the fundamental physical standards in Canada are housed and serviced in this Division, which now has primary standards equal to any in the world in the fields of mass, length, time, electricity, temperature and radiation. New standards work will involve topics such as the temperature scale below the oxygen point, and the luminous intensity standards where inadequate knowledge has precluded international agreement.

An important addition to Canadian facilities was the cesium clock recently put into operation in the Division. This apparatus substitutes the natural and unchanging frequency of cesium atoms for conventional methods of time-keeping and frequency measurement—of great importance in scientific experiments where extremely small time intervals must be measured with the greatest possible accuracy, and also as a possible future substitute for the present astronomical basis for time. A similar apparatus using the transitions within thallium is now under construction.

The analytical plotter for making maps from aerial photographs has been licensed for production, and an important study has been carried out to determine the possible use of photogrammetry for legal surveys. Indications are that the photogrammetric techniques are more accurate than present field survey methods, and also provide permanent references, thus eliminating the present need for duplication of survey effort.

Work continues on several industrial noise problems, on the thermal properties of ceramics at high temperatures, and on the development of a remote-reading temperature, salinity and depth recorder for use in oceanographic research. The possible use of plasma motors to propel rockets in outer space is being investigated. A study of the gonadal dose received by adults in diagnostic radiography has been completed.

Pure Physics.—Investigations are under way on cosmic rays, low temperature and solid state physics, spectroscopy, X-ray diffraction and theoretical physics. The work is on fundamental problems which do not have immediate application but advance the frontiers of knowledge and supply the basis for further progress in the applied fields.

Cosmic ray data from Canadian stations were forwarded to the International Geophysical Year world data centres, where they are being used by many countries. These results are also being used with the results from stations in the Southern Hemisphere operated by the University of Tasmania in a joint analysis designed to give a clearer picture of the modulating mechanism, known to be of solar origin, effecting great decreases in cosmic ray activity over large areas of the earth's surface. A search was also made for particles in the cosmic ray flux of mass equivalent to about 500 times the electron mass, but their presence was not confirmed.

Investigations on the physical properties of metals and semiconductors have revealed that the thermoelectric powers of gold, silver and platinum at temperatures below 1° absolute are about 1,000 times greater than those predicted by current theory. Some interesting results have also been obtained about semiconductors (transistors are semi-conducting devices), which are playing an increasingly large role in industry.

The structure of atoms and molecules has been investigated by means of their ultra-violet, visible, infrared and microwave spectra. Precise determination of the distances between the atoms in a molecule has been obtained for several compounds. The rotation of one group of atoms with respect to another group within some molecules has also been investigated. Because a certain amount of energy is required to produce this internal rotation, knowledge of the rotation provides additional information about the forces between atoms in a molecule.

One of the studies of the theoretical physics group has been the problem of multiple scattering of charged particles. Single collisions of charged particles such as protons and electrons, with the electrons and nuclei of absorbing matter, are fairly well understood. The group has formulated a detailed theory for multiple scattering which seems to agree with experimental findings.

Building Research.—The search for technical improvements in housing dominates the work of this Division. The research program therefore covers all aspects of housing design, building materials and components, and studies in soil, snow and ice mechanics. Regional stations engaged in research and information are maintained in Halifax, Saskatoon and Vancouver.

Many of the results of Divisional work are expressed in the National Building Code of Canada, an advisory document on building regulations for the municipalities and provinces. The Code is now in use for over 40 p.c. of Canada's population, representing more than 50 p.c. of the urban population, and is gaining increasing recognition. One section of the Division also administers the housing regulations used for all houses built with National Housing Act assistance. Another acts as the secretariat of the Canadian Government Specifications Board.

Examples of Divisional projects are the behaviour of cement aggregates and light-weight concretes; the materials and techniques of masonry construction and plastering; atmospheric corrosion of metals; paint and acoustics research, and examination of the performance of walls, windows, chimneys and domestic heating systems. Other studies involve the bearing strength of ice; the fundamental properties of various soil types, including permafrost and muskeg; frost action in soils; avalanche research; and the effects on buildings of ground vibrations caused by blasting or earthquakes. A fire research laboratory provides facilities for all types of fire resistance, fire prevention and fire fighting tests.

Special studies have been made of techniques for winter construction, including the enclosure of construction projects and use of materials such as precast concrete. There is also a section devoted to problems of building in Northern Canada, where the presence of permafrost necessitates special building practices and economics. The applicability of prefabrication techniques to northern building is being investigated.

Mechanical Engineering.—This Division works mainly in the fields of mechanics, hydrodynamics (hydraulic engineering and naval architecture) and thermodynamics. Extensive work is undertaken for a variety of industries and for government departments. Problems of improving Canadian transport facilities and equipment receive much attention.

With investigations for the St. Lawrence Seaway largely completed, it has been possible to devote more time to harbour improvements for a number of Canadian ports, notably Saint John and Port Cartier. In the ship laboratory, detailed studies were made of propeller, rudder and hull design and performance; full-scale sea trials were carried out for three vessel types. Preliminary studies are under way on improving winter navigation by water.

Rail transport studies include projects on diesel and gas turbine locomotives and improvements in rolling-stock. In the air transport field, several laboratories of the Division and of the National Aeronautical Establishment are engaged in developing new aircraft for short and vertical take-off and landing. Such aircraft would be extremely useful for both commercial and military purposes, particularly in undeveloped areas. Work has continued on anti-icing of turbojet and turboprop engines and helicopter rotor blades, and a variety of complicated instrumentation and control system problems. Possible use of ozone as the oxidant in rocket propellant combinations is being investigated.

New facilities include laboratories for instrument and petroleum qualification. A calibration machine of 100,000-lb. range, intended as a national standard of force, has been installed.

National Aeronautical Establishment.—The National Aeronautical Establishment, comprising the aeronautical, flight and structural activities of the Division of Mechanical Engineering, was formed as a separate NRC Division effective Jan. 1, 1959. The research program involves problems of high and low speed aerodynamics. Various aspects of short and vertical take-off and landing and civil aviation problems such as runway roughness, air traffic control and airport lighting, are being investigated.

Several projects involve fatigue and fail-safe design of aircraft components and mechanical systems. A study has begun of non-metallic structural materials resistant to very high temperatures.

Construction is under way of a new tri-sonic wind tunnel for aerodynamic research with a speed range up to a Mach Number about 4.5, which will greatly increase the Division's capacity for aerodynamic research. The tunnel is an extremely advanced piece of equipment, comparing favourably with similar tunnels anywhere in the world.

Radio and Electrical Engineering.—About half of the Division's work consists of defence projects and the remainder is devoted to fundamental research and engineering development in electronics, electrical engineering and radiophysics. Applications of interest to Canadian industry receive special attention.

Work has continued on the application of electronic circuitry to electronic aids to navigation in a trend toward unattended operation of remote equipment such as shore lights, resulting in simplification of equipment and greatly reduced operating costs. A project is under way aimed at unattended operation of the Sable Island West Lighthouse, using daylight-controlled acetylene valves.

In the field of medical electronics, useful devices have been put into operation for the remote monitoring of blood-pressure and heart-rate during operations, with cathode-ray tube display of these phenomena. Another useful device is for monitoring venous pressure, and controlling the pumping rate of the venous bypass pump, in heart-lung bypass procedures. An infrared scanner, producing a film record of body temperature distribution in about three minutes, was developed to assist in the thermal investigation of breast cancer.

Techniques have been developed for producing and measuring extremely low pressures in gases, and have enabled a study of gas-solid interactions at very low surface concentrations. Important progress has been made in the study and development of large ground-based rigid radomes for the weather-protection of missile tracking and guiding radars.

Extensive aurora and meteor programs were carried out in connection with the International Geophysical Year. The weather radar at Penhold, Alta., was modified considerably, and some 7,000 ft. of filmed data were contributed to the Alberta Hail Study program.

Medical Research.*—The Division of Medical Research has no laboratories of its own: it makes grants and awards fellowships for extramural research in Canadian universities and their affiliated institutions. Basic medical investigations and clinical studies are supported.

Twelve Medical Research Associates have been appointed to Canadian universities. These are competent medical research scientists nominated by universities, which provide them with faculty appointments and research facilities supported on a full-time continuing basis. Thirty-five Graduate Medical Research Fellowships, designed to enable medical graduates to obtain further training in fundamental research and ranging in value from \$3,000 to \$5,000, have also been awarded and a new category of award, that of Senior Postdoctoral Medical Research Assistant, has been instituted.

Divisional funds for the year ended Mar. 31, 1960, were awarded as follows: annual grants in aid of research, \$461,500 (31 p.c. of the budget); grants for terms of three years or longer, \$639,500 (44 p.c.); non-recurring equipment grants, \$166,200 (12 p.c.); Medical Research Associateships, \$110,000 (7 p.c.); and Medical Research Fellowships, \$92,800 (6 p.c.).

Atlantic Regional Laboratory.—The Atlantic Regional Laboratory studies practical and fundamental problems related to the resources and industries of the Atlantic provinces. The problem of slime in the "white water" of pulp mills has been investigated some time. Several species of fungi in the slime, conditions affecting their growth, and the effectiveness of various fungicides have been established. Apparently the white water contains a substance which stimulates the growth of the organisms, and a project is being carried out to isolate it and determine its structure is under way. Dosage tests have been carried out on test animals to ascertain the safe use for humans of a blood anticoagulant previously developed in the Laboratory. The use in Europe of dried seaweed as animal feed has led to comparison of the biological value of algal proteins.

Investigation of the factors controlling the deposition of pitch in sulphite pulp mills has continued and various detergents have been tested as dispersives. Another continuing project is the study of cod-skins and the collagen found in them that is used as the mother substance for photo-engraving glue. A chemical examination is being made of an extract of a red alga plentiful in some Atlantic areas and which the United States now imports from Denmark for commercial use.

Basic chemistry involved in the fabrication of steel constitutes a long-term project, involving years of study of the chemical reactions taking place at high temperatures in blast and open-hearth furnaces, and which affect the properties and processing of the final products. An apparatus for drying kelp and eel-grass—seaweeds of commercial importance in the Atlantic area—is being developed.

Prairie Regional Laboratory.—The function of the Prairie Regional Laboratory is to promote and expand industrial uses for agricultural produce of the prairie region. Together with this applied work, fundamental studies are carried out on the basic chemical

* See also pp. 427-429.

structure of agricultural materials and the complicated processes associated with the growth and development of plants and micro-organisms. Plant growth and the formation of plant constituents are studied under precisely controlled conditions, and the chemical processes taking place in the plants at different stages of growth are investigated by means of radioactive compounds.

Increased yields of commercially important products from cultures of micro-organisms are being examined. Work is under way on the production of lysine and other essential amino acids of importance in human and animal nutrition, on antifungal antibiotics, and on alkaloids of value to the pharmaceutical industry. Work is continuing on a strain of mushroom that shows promise for use in livestock feeding.

A new technique has been developed for determining the fatty acid composition of oils and fats. The new method provides plant breeders with a simple means of analyzing oil from only a few seeds, thus enabling them to compare the value of various oil-seed crops and to select those of most use to agriculture and industry. Faster, more accurate, and requiring only one-thousandth the size of sample of standard techniques, the new method could also be used in medical research, production control in industry, and other fields of fat and oil chemistry.

A mechanical foam breaker has been developed for the fermentation industry, and work is continuing on an attempt to separate starch and gluten from wheat flour to provide a gluten additive for low protein flours. A project designed to increase the strength of insulating boards without increasing their density is under way.

Administration.—Administration of the foregoing laboratories is organized as a Division of Administration and Awards, which exists only to serve the scientist. The five service units of this Division are: Awards and Committee Services (Awards, Committees, Publications, Research Journals); Administrative Services (General Services, Purchasing, Personnel); Information Services (Technical Information Service, Library, Public Relations Office, and Liaison Offices in Ottawa, Washington, D.C., and London, England); Plant Engineering Services; and Legal and Patent Services. The latter group works closely with Canadian Patents and Development Limited (see p. 137). An expert on economic research acts as special assistant to the Assistant Director, Information Services.

Section 2.—Research in the Atomic Field*

Attention is now focussed throughout the world on the transition of atomic energy from a large uranium mining operation in support of military uses to a more durable phase when a great proportion of the expanding annual construction of new electric generating plants will employ nuclear energy. In Canada uranium mining and export has reached a value of about \$300,000,000 a year, so the transition is acutely felt.

During the next ten years a large part of the relatively small uranium supply for nuclear power will be directed to the supporting inventory of nuclear fuel; beyond that the make-up to replace consumption is foreseen as rising to match and surpass the current world rate of production. By that time the atomic energy industry as a whole should be supported by the consumers of electric power but at present, in all countries and for a number of years to come, the young industry has the greater part of its costs furnished directly or indirectly through taxation. In an intermediate phase, capital advances made in anticipation of revenues from power consumers will be important.

Two government-owned Crown companies have the basic responsibilities for atomic energy in Canada; they are Eldorado Mining and Refining (1944) Limited, concerned with uranium supply, and Atomic Energy of Canada Limited (AECL) concerned with nuclear

* Prepared by Dr. W. B. Lewis, Vice-President, Research and Development, Atomic Energy of Canada Limited, Chalk River, Ont.

research and development, the design and construction of reactors for nuclear power and the production of radioactive isotopes and associated equipment such as cobalt-60 Beam Therapy Units for the treatment of cancer. For the greater part, the mining operations are conducted by private companies supported by export contracts that would have terminated in 1962, but are being revised so that some will be stretched out, without increase in total supply, to 1966.

Atomic Energy of Canada Limited has an eleven-man Board of Directors that includes individuals from private industry, public and private power companies, and the universities. The Company's major plant is near Chalk River, its Nuclear Power Plant Division is located near Toronto, and its Head Office and Commercial Products Division are both in Ottawa. The Company is collaborating with the Canadian General Electric Company Limited and The Hydro Electric Power Commission of Ontario in the building of a pilot atomic power plant, known as NPD-2 (Nuclear Power Demonstration), at Rolphton on the Ottawa River, 15 miles above the Chalk River plant. NPD-2 will generate 20,000 kw. and is scheduled for operation in 1961. AECL is also designing and constructing with the assistance of Ontario Hydro a full-scale nuclear power plant known as CANDU to supply 200,000 kw. This plant will be located at Douglas Point near Kincardine on Lake Huron and will be incorporated in the Ontario Hydro system. By agreement, Ontario Hydro will purchase the plant when it is in satisfactory operation.

To ensure that all other utilities are kept fully informed of the progress being made, the Government set up in 1954 an Advisory Committee on Atomic Power Development. This Committee, representing the utilities, meets periodically at Chalk River to assess the economic prospects of nuclear power throughout the country.

Because of the great pace of technological development in nuclear power throughout the world, AECL devotes a major effort to collaboration with many organizations. These include industrial firms and the scientific and engineering departments of universities in Canada and, through foreign government agencies and several international organizations, many technical groups in other countries. Close ties are kept with the United States Atomic Energy Commission and the United Kingdom Atomic Energy Authority, both of which have representatives permanently at Chalk River. More or less formal collaboration has been established also with the International Atomic Energy Agency, the Organization for European Economic Cooperation and Euratom as well as with India, France, Sweden, West Germany, Switzerland and Japan. Visits have also been exchanged with other countries.

During 1959, AECL announced that further expansion at Chalk River would be limited and that a site to receive the next major research and development facility had been selected in Manitoba on the Winnipeg River, about 65 miles from the city of Winnipeg. A notable event of the year was the commissioning of the first privately owned high-power experimental reactor in Canada at McMaster University, Hamilton, Ont. Information on Canadian nuclear reactors now established or under construction is given in the statement on p. 418.

Chalk River Project.—The Chalk River Project is a research and development establishment. Basic and applied research is carried on by about 200 professional scientists and engineers supported by 300 technicians devoted to research in nuclear physics, nuclear chemistry, radiobiology, reactor physics, radiation chemistry, environmental radioactivity, physics of solids and liquids, and other subjects, using as their primary facilities the two major reactors, NRX and NRU, the auxiliary reactors, ZEEP, PTR and Zed-2, the tandem Van de Graaff accelerator and analytical facilities such as a precision β -ray spectrometer, mass spectrometers, electron microscope, multi-channel pulse analyzers, automatic recorders, analogue and digital electronic computers. A large number of these scientists and engineers are engaged part or whole time on the development of nuclear fuel, on preliminary design and optimization calculations for nuclear power reactors, on solving technical problems encountered in the operation of the reactors, on

studies of potential accident conditions in and around reactors such as a burst in a pressurized water cooling system, on studying disposals of radioactive wastes, on design of instruments for reactor operation such as monitors for traces of normal water in heavy water, for radioactivity in flowing water, and on fail-safe and dependable control systems.

Other groups of engineers, scientists, technicians and tradesmen are engaged in operating and maintaining the reactors, accelerators, chemical plants, heavy water upgrading plants, workshops, nitrogen and helium liquefiers. Including the supporting services of finance, catering, library, plant hospital, fire protection, transportation, building maintenance, printing and reproduction and others, the total payroll numbers 2,300. Contractors' men and attached staff add more than 100. Compared with atomic energy establishments elsewhere the Chalk River plant is of medium size but, for its size, it covers a very broad range of activities.

Heavy-water-moderated research reactors are now becoming numerous and widespread throughout the world, but most of those operating at a high flux of neutrons use enriched uranium fuel (e.g., CP-5 near Chicago in the United States, DIDO and PLUTO at Harwell and DMTR at Dounreay in the United Kingdom, and EL-3 at Saclay in France); however, these enriched uranium reactors do not have as much space available for experiments as do those fuelled with natural uranium and so far NRX and NRU are the only heavy-water-moderated high-flux reactors using this fuel. The Canada-India Reactor (CIR) at Bombay, patterned on NRX is scheduled to come into operation during 1960.

The intense beams of neutrons provided by NRX and the still more intense beams from NRU have made possible studies that have attracted scientists from other centres. At the present time (January 1960) a team of Brookhaven (U.S.) and AECL scientists is using an NRU beam with a high-speed chopper and long flight path for neutron nuclear interaction studies, while another team with scientists from Harwell (U.K.) is using another system of choppers on another beam for studying details of the slowing-down action of moderators on neutrons.

In recent years a great technological advance has been based on the properties of nearly perfect crystals with controlled impurities, of which the transistor is the best known example. Studies of the energy changes of very-low-energy neutrons have greatly extended the knowledge of other such processes in solids and liquids where a number of atoms co-operate and an interpretation is possible in terms of quantized elastic waves or phonons. Pioneer work has been done in neutron-phonon interactions using neutron beams from NRX and NRU.

NRX and NRU share with other high-flux reactors such as the MTR at Arco, Idaho, the ability to produce certain isotopes whose formation requires that two or more neutrons react with the original atom in rapid succession to forestall radioactive decay. In this use they may in a few years be supplanted by still-higher-flux reactors planned in the United States and the U.S.S.R. For chopped neutron beams they may be supplanted by pulsed neutron sources driven by high-current accelerators, but for engineering testing of materials and especially of new types of fuel assemblies, NRX and NRU seem likely to remain unsurpassed. Since 1950, NRX has been used for fuel test irradiations in high-temperature water, and contributed to the design and operating conditions for fuel in the U.S. Naval reactors and the Pressurized Water Reactor at Shippingport. Similar irradiations have recently provided the basis for the design of fuel for the NPD and CANDU reactors.

NRU is the first high-power reactor in which the fuel is regularly changed at full power, a process that confers important advantages in power reactors. NRX is the first high-power solid-fuel reactor to operate without control rods, a feature that promises economies and safety in power reactors. Control is achieved by the level of heavy water maintained against a permanent drain by the speed of return by pumps.

CANADIAN NUCLEAR REACTORS IN OPERATION, UNDER CONSTRUCTION OR APPROVED FOR CONSTRUCTION

Name	Location	Date of Start-up	Power	Fuel	Moderator	Coolant	Use
Zero Energy Experimental Pile (ZEP).....	Chalk River, Ontario	1945	100 w.	Natural uranium metal or oxide	Heavy water	--	Lattice experiments
National Research Experimental (NRX).....	Chalk River, Ontario	1947	40, 000 kw.	Natural uranium metal	Heavy water	Ordinary water	Research and isotope production
National Research Universal (NRU).....	Chalk River, Ontario	1957	200, 000 kw.	Natural uranium metal	Heavy water	Heavy water	Research and plutonium and isotope production
Pool Test Reactor (PTR).....	Chalk River, Ontario	1957	100 w.	Enriched uranium alloy	Ordinary water	Ordinary water	Reactivity and absorption measurements
Toronto University Sub-critical Reactor.....	Toronto, Ontario	1958	--	Natural uranium metal	Heavy water	--	Research and teaching
McMaster Nuclear Reactor (MNR).....	Hamilton, Ontario	1959	1, 000 kw.	Enriched uranium metal	Ordinary water	Ordinary water	Research
ZED-2.....	Chalk River, Ontario	1960	100 w.	Natural uranium metal or oxide	Heavy water	--	Lattice experiments
Canada-India Reactor (CIR).....	Bombay, India	1960	40, 000 kw.	Natural uranium metal	Heavy water	Ordinary water	Research and isotope production
Nuclear Power Demonstration (NPD-2).....	Rollpton, Ontario	1961	20, 000 kw. (electricity)	Natural uranium oxide	Heavy water	Heavy water	Power demonstration
Canadian Deuterium-Uranium (CANDU)...	Douglas Point, Ontario	1964-65	200, 000 kw. (electricity)	Natural uranium oxide	Heavy water	Heavy water	Power

Nuclear Power Prospect.—The generation of electricity by nuclear power on a competitive economic basis is expected to be established by the type of reactor now being designed by the Nuclear Power Plant Division of AECL at Toronto.

This promise rests on the attainment of very-low-cost fuelling by an extremely simple system tested over many years by experiments in the NRX reactor. The fuel will be uranium dioxide specially prepared from natural uranium entirely in Canada. A wide range of tests in hot channels in the NRX reactor at heat ratings and energy yields in excess of those required has established that this oxide fuel is incomparably more dependable than the uranium metal fuel for which the NRX and NRU reactors were designed. No provision for reprocessing the irradiated fuel is involved, for, by careful attention in the reactor design to minimizing any waste of neutrons, an energy yield of over 9,000 thermal megawatt-days is expected from a ton of uranium before it is discarded. This results in a prospective fuelling cost of about 1 mill (0.1 cent) per electric kilowatt-hour, to be compared with about 3 mills from coal at \$8 per short ton.

Canada has access to such an abundance of coal, oil and natural gas that the competitive cost level for electric power is lower than in many other countries. Nuclear power plants of the types now under construction in the United Kingdom and the United States have been assessed as unable to reach a low enough cost level, at least until several successive plants have been built and operated to discover where economies are possible. Plants of the CANDU type do not promise to be significantly cheaper in initial outlay, but the fuelling cost can be so much less that meeting the competitive target is a very real prospect.

The low fuelling cost derives as much from the details of the design proposed as from the general type of reactor chosen. Some of the important features seem worthy of mention. The full-scale plant will generate 220 megawatts with a steam-cycle efficiency of 32.8 p.c., so the reactor has to supply 670 thermal megawatts to the steam-raising plant. The reactor is essentially a tank of heavy water, 20 ft. in diameter and 16.5 ft. long, lying horizontally. It is penetrated by 316 fuel channels parallel to the axis on a 9-inch-square lattice. Each channel is a zirconium-alloy pressure tube of 3.25 in. inside diameter and about 0.17 in. thick. The fuel consists of bundles of 19 rods, 0.6 in. diameter, 19.5 in. long, made of dense uranium dioxide in thin zirconium-alloy tubes. Heat is taken from the fuel directly by heavy water that passes at 560°F. to the steam boiler, where normal water is raised to saturated steam at 483°F. and 560 psi. The heat developed in the heavy-water moderator that is in the tank outside the fuel channels is not directly used and amounts to about 40 thermal megawatts. The over-all net plant efficiency is then 28.2 p.c. These details show that the design represents a very considerable advance over that originally conceived in 1956, and the improvement bears promise that continued progress will lead to costs well below the economic target. As examples of the advance, it may be noted that for the same electric power output, the reactor power has been brought down from 790 to 710 megawatts and the length of fuel rod from 86 to 30 kilometres. The prospective fuelling cost has dropped from 1.85 mill/kwh. to 1.0 mill/kwh. On the other hand, no over-all reduction has been achieved in the capital cost estimates which remain in the range \$300 to \$400 per electrical kilowatt for the whole plant. No reduction is expected until manufacturing experience has been gained that can be used in future construction.

These figures will serve to explain why the first plants seem to find economic application in Canada only in the Ontario system, where annual charges on capital are low and coal has to be imported and costs about \$8 per short ton. Moreover the demand for electricity in Ontario is growing at more than 200 megawatts capacity per year. To build reactors for lower powers saves little in the cost, so the cost per kilowatt rises and becomes uneconomic. When confidence has been gained from the early plants, higher powers seem likely to be attempted and 400 electrical megawatts from one reactor may be attained.

Operating experience with the NRX and NRU reactors at Chalk River and with the many other types throughout the world has served to emphasize the extreme difficulty and costliness of making even minor operating repairs in the presence of the extremely

high levels of radiation that are encountered around reactors. Directly and indirectly, this is responsible for the current hesitation to construct a number of large plants that for economic power cost no less than \$40,000,000 or \$50,000,000 each. With every new design it is necessary to acquire operating experience before the reliability and availability can be effectively estimated. Experience with defective fuel has been deliberately sought at Chalk River, because this is one of the difficulties most likely to be encountered. Appropriate techniques of locating the defective element, removing it and cleaning up the released radioactive fission products, have been established and practised; at the same time fuel designs and ratings have been studied which lead to least difficulty in these operations. Experience of mechanical failures of control rods has lent weight to reactor designs such as NPD-2 where control rods are not needed. Temperature changes are liable to provoke mechanical failures, so design is aimed at keeping the reactor at power for all essential operations including refuelling and complete maintenance testing and readjustment of instruments and working parts of the control system.

These considerations lead to a vicious circle, for the quickest way to achieve reliability is to construct and operate a number of plants following these design principles, but until such plants have operated satisfactorily utilities are unwilling to take the risk of lost time for repairs. The same principles hold throughout the world. For example, the United Kingdom is following a program based on the Calder Hall type of reactor developed, not by a utility company, but by the government to serve a military requirement. Italy is purchasing three power reactors—one from the United Kingdom, one from the United States based on the Shippingport and Yankee reactors, and one from the United States closely following the Commonwealth Edison Dresden plant. Canada is pioneering another pattern financed by the government, and working at Chalk River to develop technical knowledge and experience that will give confidence to the utilities. The performance of the demonstration reactor (NPD) will tell whether the sought-for reliability has been achieved so that utilities can take over.

Because the CANDU type of reactor is suitable only in large units, AECL is undertaking to study another type of reactor proposed by the Canadian General Electric Company that should have a lower capital cost. This is also a heavy-water-moderated reactor, but the heat is taken from the fuel by an organic liquid specially chosen for a high boiling point and minimum decomposition by radiation. This is a hybrid design that should utilize the Chalk River experience with heavy water and uranium oxide fuel and the experience of the organic liquid developed in the United States as a coolant and moderator for a nuclear reactor. Development of metals that are suitable for use in such a reactor is required and may take a few years to effect.

A third type of power reactor is also under study: again heavy-water-moderated and uranium-oxide-fuelled, but the coolant is normal steam at high pressure. The steam would be superheated in the reactor. New materials are required also for this design and their development may be lengthy. Such a reactor would have a higher efficiency than the CANDU type and would be suitable for large sizes.

Section 3.—Space Research in Canada*

There is an active interest in space science in Canada. This is because research in the physics of the upper atmosphere and in nearby space (where the atmosphere merges into interplanetary space) has been stimulated for many years by Canada's unique position in relation to the axis of the earth's magnetic field. This geographic position also signifies a certain responsibility for Canadians to carry out research in their own northern areas as well as to co-operate with others conducting scientific work in or over Canadian territory.

Until the advent of space sounding rockets and satellites, activities were confined to indirect observations from the ground, but with the development of new techniques and the growing capabilities of Canadian science a comprehensive space science program is

* Prepared by Dr. D. C. Rose of the National Research Council of Canada, Ottawa.

being developed in Canada. The program is small compared to that of satellite-launching countries but it will contribute to the advancement of knowledge made possible by the development of space vehicles. Canada's program consists of the launching in Northern Canada of sounding rockets carrying instruments, co-operating with United States groups in their extensive program in Canada, assisting in the tracking of satellites, and in the design and construction of scientific experiments to be launched in a United States satellite sometime in 1961.

The technological developments necessary to put satellites in orbit or even to launch rockets that will penetrate the atmosphere are considerable. The scientific achievements in producing these have been great but from the point of view of space science the rocket or satellite is nothing more than a vehicle and in fact is usually spoken of as such. It was developed for military purposes though it is important to note that several of the vehicles used in space science by various countries were designed solely for carrying scientific instruments and these vehicles have no practical military application.

Though there is keen rivalry between the United States and the Union of Soviet Socialist Republics to get a man into space and this rivalry appears on the surface to be political in motivation there are sound scientific reasons for so doing. With a man to operate them, scientific instruments become much more versatile, and objectives can be changed in flight using judgment that still cannot be built into a machine. No matter how complicated a machine is, judgment in programming cannot be built in where the features to be judged are not known.

An example of the advancement of scientific knowledge that can be achieved by penetrating the earth's atmosphere is a study of the radiation that reaches the earth's outer atmosphere from the sun or from outer space. For simplicity, included in the term "radiation" are both electromagnetic waves like light and clouds of rapidly moving particles such as the nuclei of atoms. The energy of these can be measured in the unit so commonly used by physicists known as the electron volt. It is a very small unit requiring 6.24×10^{18} per second to be equivalent to one watt, but the number of particles is sometimes very high. Using this unit one refers to the energy per quantum of light if electromagnetic in nature, or per single particle if a particle cloud is being considered. The realized energy is, of course, the energy per quantum or particle multiplied by a density of the quanta or particles. The quantum of light having the highest energy that can penetrate the atmosphere is about four electron volts. The energy of the most energetic known cosmic ray is about one billion times one billion electron volts (where one billion = 10^9). None of these radiations or particles in this enormous range of energies can penetrate the atmosphere without interacting with it in a way that changes the identity of the primary radiation. In fact, radiation in the range from four electron volts to about two billion electron volts cannot penetrate the atmosphere to sea level at all. This means that the atmosphere is completely opaque to all ultra-violet light, X-rays and low energy cosmic rays. Until the advent of rockets and satellites the existence of such radiation from the sun or sky could only be inferred by indirect measurements on some of the effects they produce, such as faint light from the night sky and aurora.

This is just an example of the advances in pure science that can be made by carrying instruments in rockets and satellites. Practical applications in expanding available radio frequencies for communication and for improving meteorological forecasting could be explained in detail but both are associated with the need for a better knowledge of the radiations mentioned above and also the chemical composition and physical state of the atmosphere at levels above about 30 miles.

The earth's atmosphere gradually merges into the atmosphere of the sun, there being no region in the environment where the density of matter is nearly as low as it is believed to be in interstellar space. This is so, even though the density of this matter is very much lower than the best vacuum that can be produced in the laboratory.

The solar atmosphere in which the earth moves is quite turbulent and the motion and the density are constantly changing. The solar gas is very hot and electrically conducting. Clouds of solar gas and a flux of energetic particles from space interact with the

earth's magnetic field. It is this interaction that makes space research in Canada so important, because the axis of the earth's magnetic field is tilted with respect to the earth's axis in such a way that the northern region where the magnetic lines of force are nearly vertical is in Northern Canada. This interaction with the magnetic field causes the ionosphere disturbances that are responsible for blackouts in radio communication as well as the well-known aurora.

Canada's interest in space research is, therefore, mainly in this region at heights from about 30 to 200 miles. This is the region where rockets serve better than satellites as the instrument-carrying vehicle. Such interest is by no means new. Studies of the ionosphere using the technique of reflected radio waves have been conducted for years, and also studies of the aurora both by spectroscopy of the light it emits and by the reflection of radio waves from the auroral discharges. Scientific research groups in the University of Saskatchewan, the Defence Research Laboratories and the National Research Council have made important contributions.

The importance of direct measurements at high geomagnetic latitudes led the United States in 1956 to establish a comprehensive rocket-launching facility at Fort Churchill in Manitoba as part of their International Geophysical Year program. This was a purely scientific effort even though the operation of the rocket range was by the United States Army and it was established at a Canadian Army Base under Canadian Army supervision.

The United States groups using the range were very generous in making the facilities available to Canadian scientists and in treating it as a joint undertaking. The Canadian contribution during the IGY, though small compared to the total operations at Churchill, was appreciable in that the operation would have been very difficult and much more expensive had it not been for the existence of the Army Base and the Defence Research Board's Northern Laboratory. Meteorological assistance was also given by the Department of Transport. During the IGY, scientists of the Canadian Armament Research and Development Establishment built experiments in two rockets launched at Churchill designed to study certain visible and infrared radiations produced in the upper atmosphere.

After the close of the IGY (Dec. 31, 1958) a limited program was continued as a joint operation. The United States continued to operate the rocket-launching facility but several Canadian projects have been undertaken. It was a natural development that Canada's record of research in the ionosphere should lead to suggestions to extend measurements using satellites and rockets. The invitation of the American Space Science Board of the National Academy led the Defence Research Board's Telecommunications Establishment to suggest an experiment to be carried in a satellite wherein the ionosphere was observed from above rather than from below. One common technique on the ground is to observe echoes of short radio pulses directed upward and reflected downward from the ionosphere. This is known as vertical sounding. The same technique from a satellite was suggested but with the radio pulse transmitted from above and reflected upward. The project has been called the "Topside Sounder" and the instruments designed and built by Canadian scientists will be launched in 1961.

During 1959 two Aerobee rockets given to Canada by the United States were used for Canadian experiments. Experiments designed to measure electron density in the ionosphere and the intensity of low energy cosmic rays were carried out successfully. The Canadian Armament Research and Development Establishment had been working for some time on a solid fuel propellant for large rockets. Their results reached a stage during 1959 where a propellant test vehicle could be launched at Churchill and four such rockets were launched late in 1959. While the development of propellants is obviously a military objective this particular investigation can result in the construction of a very good rocket for scientific purposes which will carry 150 lb. of instruments up to nearly 200 miles. Experiments planned for 1960 and 1961 will use a rocket of Canadian design and manufacture.

The plans for 1960-61 include Canadian university research groups for the first time. The National Research Council formed an Associate Committee on Space Research in 1959, which will co-ordinate experiments proposed and carried out by university groups and the NRC laboratories. It will make arrangements for supplying the university groups with rocket nose cones in which they can build experiments and then have them launched at Churchill.

At the request of the National Aeronautics and Space Administration in the United States, a satellite tracking station is being built near St. John's, Nfld. While this is one of a world-wide network of tracking stations of United States design and the equipment is being supplied by them, it will be operated as a Canadian station. In the early days of Soviet satellites a great deal of tracking—visually, photographically and by picking up radio signals—was done in Canada. Tracking by visual and photographic means, if well organized so that the satellite can be located accurately, is still of considerable value and amateur groups who are interested can make important contributions.

Canada is also taking an active part in international organizations on space research, having membership in the Special Committee on Space Research (COSPAR) of the International Council of Scientific Unions (ICSU) and in the United Nations Committee on the Peaceful Uses of Outer Space.

COSPAR being a committee of the International Council of Scientific Unions is purely scientific in nature. Membership in it is open to countries having space science programs which are recognized by the International Council of Scientific Unions. International Scientific Unions, and special committees thereunder are for the advancement of scientific activities and the representation on them is from National Academies or National Research Councils rather than from governments. Despite the non-political character of COSPAR, political questions arose in its formation. Its original constitution called for membership from International Unions and from National Academies in countries with space science programs. At the first meeting after an organization meeting, the selection of representatives from the International Unions was accidentally such that the U.S.S.R. had only one voting member while the U.S. and the U.K. had three or four each. The U.S.S.R. delegate objected to such a situation and many members felt he had some justification. It took about a year of negotiations to rectify this and a successful meeting of COSPAR was held in Nice, France, in January of 1960. A symposium on space science was organized in conjunction with the meeting and three papers were presented by Canadian scientists.

The United Nations Committee on the Peaceful Uses of Outer Space was first formed as an ad hoc Committee by the Thirteenth General Assembly. The Committee consisted of 18 countries of which Canada was one. Political problems arose there again because of Soviet disagreement over membership and five member nations refused to take any part in it. Nevertheless the Committee met in 1959 and produced an informative and substantive report. Much of the Committee's work was done by two sub-committees, one technical and the other legal, each member country having representation on both. A Canadian scientist was elected chairman of the technical committee. The Fourteenth General Assembly of the UN accepted the report and formed a new committee of 24 nations again including Canada.

In many countries Astronautical Societies have been formed. Some of these require professional qualifications and some are for interested amateurs. The groups have an international organization known as the International Astronautical Federation. These organizations are not government-sponsored but form an important link in public and commercial interest in space. There are at least three such groups active in Canada, the Astronautical Society of Canada with headquarters in Montreal, the Canadian Astronautical Society with headquarters in Toronto and the Astronautical Section of the Canadian Aeronautical Institute.

Section 4.—Other Scientific and Industrial Research Facilities

Aside from the research facilities and activities covered in Sections 1, 2 and 3, Canadian research is carried on by various federal agencies, provincial organizations, universities and industries. Several provinces in Canada have established provincial Research Councils to stimulate and support research on problems having special provincial significance. The universities, of course, form an extremely important part of the Canadian pattern of research. Much of their work is along fundamental lines but practical problems are not neglected, especially those of regional interest.

All three types of institutions—federal, provincial and university organizations—have an interest in problems of industrial significance: this is part of the current Canadian pattern of research. Though many Canadian industries now possess research facilities—some of them quite extensive—the main bulk of industrial research to date has been done under government auspices.

Thus the unique problems of the country, particularly its large area coupled with a small population, have led to a typically Canadian organization of research, of which a very strong associate committee system is perhaps the most distinctive feature.

Subsection 1.—Federal Organizations

Although research by industrial concerns has been slow to develop in Canada, government research has expanded rapidly, at first because of the need for speeding up the production of raw materials, which were for many years the basis of Canada's export trade, and secondly because of the more recent interest in the processing of these raw materials and the necessity of meeting the needs of national defence. Federal agencies involved in research include the Departments of Agriculture, Fisheries, Mines and Technical Surveys, National Defence, National Health and Welfare, Northern Affairs and National Resources, and Trade and Commerce; the National Research Council; and Crown corporations such as Atomic Energy of Canada Limited. A system of committees, with nation-wide representation, eliminates unnecessary duplication of work from these national research organizations.

The scientific work of the Department of Agriculture is described in Chapter IX of this volume, the work of the Defence Research Board in Chapter XXVI, specialized work in scientific forest research in Chapter X, scientific services concerned with Canada's mineral resources conducted by the Department of Mines and Technical Surveys in Chapter XI, investigational work of the Department of Fisheries in Chapter XIII, research of the Canadian Wildlife Service of the Department of Northern Affairs and National Resources in Chapter I, the work of the National Research Council at pp. 408-415 and atomic research at pp. 415-420. The activities of the other federal agencies engaged in research are described briefly in the following paragraphs.

Department of National Health and Welfare.—The Department of National Health and Welfare supports both intramural and extramural research programs. Within the Department, the Food and Drug Directorate, Laboratory of Hygiene, Occupational Health Laboratory and various clinical services are engaged in scientific research in their respective fields. Special studies and surveys are conducted in social and medical economics by the Research Division. The extramural program consists of grants in aid of medical research at universities, hospitals and other research institutions from funds under the National Health Program. The Public Health Research Grant provides over \$500,000 per annum, with allocations from the Mental Health, General Public Health, Tuberculosis, Cancer, Child and Maternal Health and Crippled Children's Grants making up approximately \$2,000,000 additional funds. To co-ordinate medical research programs, meetings are held by representatives of the National Research Council, Defence Research Board, Department of Veterans Affairs, National Cancer Institute and the Research Advisory Committee of the Department of National Health and Welfare. These have provided a reasonably clear definition of the field of interest of each organization and have minimized uneconomical overlapping.

Grain Research Laboratory.—Rapid development of grain production in Western Canada led to the passing, in 1912, of the Canada Grain Act. This Act is administered by the Board of Grain Commissioners, which reports to Parliament through the Minister of Trade and Commerce. The Board is responsible for control of the weighing, grading and warehousing of Canadian grain. Soon after its establishment, the Board encountered problems that required scientific study and a Grain Research Laboratory was established at Winnipeg, Man., in 1913.

The Grain Research Laboratory, with a staff of 55, is the main centre of research on the chemistry of Canadian grains. It is well staffed and equipped to provide the service required to help maintain and expand domestic and foreign markets for all types of grain. The Laboratory collects and tests samples of various crops to obtain information on the current quality of all grains shipped during the crop year and prepares, annually, certain information required by the Board for administering the Canada Grain Act. Fundamental research is also undertaken; the program is directed toward increased understanding of what constitutes quality in cereal grains and toward improving the methods of assessing quality.

Subsection 2.—Provincial Organizations

The fact that only a few provincial research organizations exist does not indicate lack of interest in research by the provinces. Most provincial governments have university laboratories to consult, particularly about local industrial and agricultural problems, and many individual departments have facilities for research in their particular fields of endeavour or assist research through the provision of financial aid to students working in those and other scientific fields. Agriculture is particularly well covered because of its importance as an export industry but the provinces are also intensely interested in their other natural resources. Their efforts in the fields of agriculture, forestry, mining and fisheries are outlined in the Chapters dealing with those subjects (see Index).

Nova Scotia Research Foundation.—This body was created by the Government of Nova Scotia in 1946 to give its people additional scientific and technical assistance in finding new and better ways to utilize the resources of the forest, the sea, the farm, the mine and the process industries. To this end it seeks to correlate and further scientific work on local problems and available resources. It assists universities, colleges, research groups, industries, provincial and federal departments and individuals by loans of equipment, grants, scholarships, laboratory and summer assistants, library, cartographic, photogrammetric and translation services, and technical information. It has supported or collaborated in work on breeding new varieties of plants and root nodule bacteria; on antibiotics, poultry, blueberry culture, coal-burning equipment, the constitution and gasification of coal, the non-destructive testing of mine equipment, the utilization of anhydrite, diatomite, fish waste, gypsum, seaweed, slag, slab wood and fertilizing materials. It has conducted geophysical, geological, air pollution, and seaweed surveys as well as forest aphid, forest ecology and genetic studies and assisted studies on the nutrient cycles of lakes, on X-ray crystallography, and on pressures in underground strata. Its Geophysical Division is equipped to undertake all types of magnetometric, gravimetric, resistivity, seismic and electromagnetic explorations. The Technical Services Division provides free technical information to industries in the province and offers them research and development services and facilities in the fields of physics, chemistry and engineering, including operational engineering. During the summer of 1959, 75 people were engaged in 28 research projects.

Saskatchewan Research Council.—The Saskatchewan Research Council was established in 1947 for "research and investigation in the physical sciences as they affect the economy of the Province of Saskatchewan, and such particular matters as may be brought to its attention from time to time by the Lieutenant-Governor in Council". The term 'physical sciences' is given a broad interpretation to include biology, geology and engineering. Within this field the Council undertakes basic and applied research.

Up to the present the Council has functioned mainly by granting funds for approved research projects and awarding scholarships at the University of Saskatchewan. It has also conducted a technical information service with the assistance of the National Research Council. It has recently entered a new phase and, in addition to its former activities, employs a full-time staff in a new laboratory building located on the University grounds.

Research Council of Alberta.—The Province of Alberta set up a Scientific and Industrial Research Council in 1921, the promotion of mineral development within the province being the chief purpose leading to its establishment. The Council operates under an Act somewhat similar to that setting up the National Research Council and is financed by provincial government appropriations. The present program is directed to the application of basic and applied science toward the development of the natural resources of the province. Investigations include studies on coal, petroleum, natural gas, geological research and surveys, soil surveys, hail studies, irrigation and highway research. The Council maintains a gasoline and oil testing laboratory and has a group of industrial engineers to provide scientific information to developing industry. The Council laboratories, located on the University of Alberta campus, include a \$750,000 research laboratory and pilot plant provided by the Province of Alberta in 1955. The laboratories work in co-operation with the scientific departments of the University and the operations of the organization are controlled by a council of ten individuals representative of government, the University and industry. The various research projects are under the immediate supervision of advisory committees and the chairmen of these committees form the Technical Advisory Committee of the Council, the body responsible for the integration and operation of the scientific aspects of the program.

British Columbia Research Council.—The British Columbia Research Council, under the sponsorship of the provincial Department of Industrial Development, Trade and Commerce, provides a scientific and engineering staff with laboratories on the campus of the University of British Columbia. The objective is to enable even the smallest firms to improve their competitive position in Canadian and world markets by the use of the most up-to-date scientific and technical knowledge. The Council provides three classes of service: a free information service in collaboration with the National Research Council; assistance to specific firms at cost where information cannot be supplied from existing knowledge; and, at the Council's expense, research on problems of general value to the industrial development of the province.

The Ontario Research Foundation.—The Ontario Research Foundation, established in 1928, is a non-profit applied-research organization financed initially by an endowment fund composed of subscriptions from manufacturers, corporations, private individuals, and a grant from the provincial government. Most of its current income is derived from contract research and annual provincial government grants. The Foundation carries on research to assist agriculture and industry in developing the natural resources of the province. A study has been made of the physiography and climate of southern Ontario and also of the parasites found in wildlife in this province. Many investigations have been undertaken in the industrial field and the Foundation is well equipped to work in engineering and metallurgy, physics, textiles, chemistry and biochemistry. The services of the Foundation are at the disposal of industry on a fee basis, and consultative services, testing, short-term studies and long-term investigations have been undertaken for hundreds of firms. The work has resulted in better products and in more efficient processing. The Foundation administers a grant from the provincial government to support postgraduate scholarships and scientific research in the universities of Ontario. It provides an information service for industry, which is supported by the Ontario Department of Planning and Development and the National Research Council.

The Hydro-Electric Power Commission of Ontario.—The Research Division of Ontario Hydro, with a staff of 300, provides testing, investigation and research services for all phases of the utility's engineering design, construction work, and system operation

and maintenance. The Division maintains close liaison with other research organizations and power utilities, and staff members participate in the committee work of major technical societies and standardizing associations.

Electrical investigations pertain to methods of generating, transmitting, distributing and utilizing power, and to improvement in equipment for these purposes. Among the topics studied are transmission at extra-high voltage; problems of electrical insulation; system operation and control, and system protection against lightning; communications and telemetering; illumination; and power metering. Attention is given to the performance and efficiency of power equipment, to improved measuring techniques, and to means of minimizing the hazards of electric shock.

Among the structural and mechanical topics studied are the following: soil mechanics as related to foundations, roads and earth dams and dykes; the physical properties of structural components and of numerous items such as conductor joints and line hardware; the mechanical performance and safety features of equipment and various types of machines; metals and metallurgy; welding materials, techniques and applications; atmospheric and underground corrosion of metals; stresses in materials and structures; noise and vibration conditions; and a variety of problems associated with the design, construction and maintenance of concrete structures, the application of masonry materials, and the production, placement and quality control of all concrete used.

In addition to chemical analyses and tests performed on a wide range of materials and products purchased, chemical research work is conducted with regard to such subjects as wood preservation, plastics applications, protective coatings, brush and weed control, lubrication, liquid electrical insulants, water treatment, thermal insulation, and corrosion prevention.

Other studies contributory and supplementary to the main branches of work are carried on in the fields of physics, biology, petrology and mathematics. Operations research studies are used in determining optimum policies and procedures in vehicle replacement, inventory control, reserve transformer capacity and economical power dispatch.

Subsection 3.—Medical Research

Medical Research Facilities.*—Support for medical research is provided by the federal and provincial governments, by private foundations or corporations, by voluntary agencies which raise money by public subscription, and by universities and hospitals. From these sources there are available (a) research fellowships for training, (b) grants-in-aid for assistance in problems of a fundamental or clinical nature, (c) salaries for trained personnel, and (d) the necessary capital and running expenses for investigations which are of particular interest to governments, hospitals or pharmaceutical houses.

The Departments of National Health and Welfare and National Defence maintain establishments in which research is done in well-equipped laboratories with highly trained personnel. The Department of Veterans Affairs encourages its staff to do research in its own hospitals; much of this concerns chronic illness, such as arthritis, atherosclerosis, metabolic and nutritional derangements (see pp. 332-334).

Most of the fundamental medical problems are studied in medical schools through the system of grants-in-aid. Funds from the Federal Treasury are provided through the National Research Council, the Defence Research Board, and the Department of National Health and Welfare. The National Research Council supports mainly research in the basic medical sciences—anatomy, physiology, biochemistry, pharmacology, bacteriology, pathology, and experimental surgery—but approximately one-quarter of its grants are for clinical investigations. The Defence Research Board makes grants for studies particularly related to problems of defence, such as shock, the preservation of blood and the use of blood substitutes, the effects of low temperatures, etc. The Department of National Health and Welfare provides funds for research, available on the recommendation of

* Prepared by Dr. J. Auer, Assistant Director, Division of Medical Research, National Research Council, Ottawa.

provincial departments of health, in the following fields: public health research, tuberculosis control, child and maternal health, mental health, and general public health. It also gives assistance to the Canadian Arthritis and Rheumatism Society (which obtains other support by public subscription) and to the Ontario Heart Foundation (which derives its other resources from the Ontario Provincial Government). In addition the Department of National Health and Welfare makes available to the provinces cancer grants, out of which the provinces may supplement the funds for research which the National Cancer Institute receives from the Canadian Cancer Society. Thus the Department of National Health and Welfare is the Canadian agency that gives the greatest support to extramural research in medicine; its interest is primarily in those problems that have a direct bearing on the health of the nation rather than in fundamental research.

Universities receive funds for research also from provincial branches of the Canadian Cancer Society and from such government foundations as the Ontario Cancer Treatment and Research Foundation and the Alcoholism Research Foundation, from fraternal societies and clubs such as the Rotary Club, from the J. P. Bickell Foundation, the Atkinson Charitable Foundation, the Canadian Life Insurance Officers Association, the Muscular Dystrophy Association of Canada, the Banting Research Foundation, the Multiple Sclerosis Society, pharmaceutical companies, etc. At several universities, individual investigators also receive grants in aid of research from various granting bodies in the United States of America.

With help from these diverse sources, active research programs are in progress in every one of the twelve Canadian medical schools. In certain of these there are special departments devoted to research, e.g., the Departments of Medical Research at the University of Toronto and at the University of Western Ontario, and the Department of Investigative Medicine at McGill University; these departments contain graduate students who work to higher degrees. With few exceptions, departments designed for undergraduate instruction are active in research; a majority provide graduate instruction as well, in which the students are maintained on research fellowships or grants.

Notable contributions to medical knowledge are made every year by Canadian scientists, but space permits the mention of only a few fields: studies on epilepsy at the Montreal Neurological Institute; functions and interrelations of areas in the brain and brain stem and studies in neurophysiology and neurochemistry at McGill University, the University of Montreal, the University of Ottawa, the University of Western Ontario and Laval University; endocrine and metabolic studies at McGill University and the Universities of Montreal, Toronto, Western Ontario, British Columbia and Manitoba; anticoagulants at the University of Saskatchewan; atherosclerosis and hypertension at McGill and Queen's Universities and the Universities of Western Ontario, Toronto and British Columbia; hypothermia at the University of Toronto; surgery of heart and blood-vessels at McGill University and the Universities of Toronto and Montreal, and the Montreal Institute of Cardiology; tuberculosis at Dalhousie University, the Institute of Microbiology, Montreal, and the Connaught Medical Research Laboratories, Toronto; mental health studies at the Nova Scotia Department of Health, the Allan Memorial Institute at McGill University, the University of Toronto, Regina General Hospital and the University of British Columbia; virology, including poliomyelitis, at the Institute of Microbiology, Montreal, the Sick Children's Hospital, Toronto, and the Connaught Medical Research Laboratories; bacteriology, immunity and hypersensitivity at McGill University, the University of Montreal, Queen's University, the University of Western Ontario and the University of Toronto; cancer in all the medical schools.

Connaught Medical Research Laboratories.—The Connaught Medical Research Laboratories, University of Toronto, were established for the advancement of preventive medicine and public health through research and through the preparation of biological and other products essential in prevention or treatment of certain diseases. The Laboratories render a medical public service to all the provinces of Canada and, to an extent, to countries abroad. This service was initiated when the preparation of diphtheria antitoxin was undertaken in the Department of Hygiene at the University in an effort to reduce

the death toll from diphtheria in Canada. At the same time, the Department initiated investigations into this and other diseases. Since then, research activities have constantly expanded and today more than 70 studies are being conducted in the Laboratories.

The research program of the Laboratories concerns the broad field of preventive medicine. By including the study of certain animal diseases, particularly those which are transmissible to man, and through preparation of related products, the Laboratories are serving both the medical and veterinary professions.

The research projects are extensive and include studies of bacterial and virus diseases, investigations in immunology, epidemiology, physiology, biochemistry, and in other fields related to preventive medicine. These undertakings are maintained in part through the distribution of products, the furnishing of which constitutes an important public health service. Also important to the advancement of public health is the assistance rendered by the Laboratories in the postgraduate teaching of medical officers of health, nurses, dentists, veterinarians, and other professional personnel. From the inception of the Laboratories in 1914, members of the staff have been closely associated with postgraduate teaching in public health. In 1924, through the beneficence of the Rockefeller Foundation and with the co-operation of the government of the Province of Ontario, the School of Hygiene was established. This provided greatly enlarged teaching facilities and also extended the participation of the Connaught Medical Research Laboratories in the work of training public health leaders.

On the University campus the College Division of the Connaught Medical Research Laboratories and the School of Hygiene share one building, permitting of joint use of research and laboratory facilities of the two institutions, and promoting a close and mutually advantageous relationship. Here also the production of insulin and other glandular products is undertaken. On Spadina Crescent in Toronto, the Spadina Division of the Laboratories provides accommodation for much important work including the production of penicillin and research in the field of antibiotics. Additional facilities are provided near Toronto at the Dufferin Division and include a 145-acre farm property with modern laboratory buildings and quarters for animals.

Through the organization of the Western Division in the University of British Columbia, the Connaught Medical Research Laboratories have shared in the development of an important program of research in preventive medicine on the Pacific Coast.

Thus for over forty years the Connaught Medical Research Laboratories, with the co-operation of the medical profession and the official public health authorities, have contributed in steadily increasing measure to the advancement of research and public health in Canada.

The Banting Research Foundation.—The Banting Research Foundation supports the work of the Banting and Best Chair of Medical Research in the University of Toronto and aids medical research throughout Canada by making grants-in-aid to those who submit problems of sufficient medical interest to the Board of Trustees. The Board meets and makes grants usually three times a year, around June 1, Oct. 1 and Feb. 1. Five members of the Board of Trustees are appointed by the Board of Governors of the University of Toronto and the Alumni Association of the University of Toronto, and these five members appoint two other Trustees, then the seven members appoint an eighth Trustee. The address of the Honorary Secretary-Treasurers is 500 Sherbourne Street, Toronto 5, Ont.

Subsection 4.—University Research

Although there is considerable diversity of purpose in the aims of Canadian universities and colleges, they may be generally described as (1) the diffusion of knowledge through some teaching, extension and evening classes, and written reports; (2) the preservation of knowledge with some reorganization from time to time; and (3) the extension of the boundaries of knowledge essentially through research.

There are, of necessity, differences in emphasis in carrying out these aims. The undergraduate courses are designed to provide broad basic understanding in a variety of subject fields, to be followed by a more extensive and intensive application in one or

two of them. Graduate schools provide for a broader and deeper penetration and understanding in one field, supplemented perhaps with more general knowledge in related fields. Seminars, directed study, and individual research usually form a considerable part of advanced study. Most of these courses provide for practice in the research methods of the discipline—whether through experiment, questionnaire, logic or statistics—in order to prepare students capable of adding to present knowledge. This applies to the closely knit professional fields as well as to the more general branches.

For many years research in the universities was directed towards obtaining knowledge for its own sake and was considered pure research. Later it was recognized that the conclusions of such research provided the basic information for applied science and before long the universities, because of their unique position in having trained specialists and equipment, were involved in both basic and applied research. During World War II they were encouraged to undertake emergency and other contractual research and since then the trend towards broadening the field of research, increasing the capacity of universities to educate advanced students, and procuring large-scale costly equipment has shown rapid advance. This has created new problems but has provided even greater opportunities for undertaking sizable projects which could not have been attempted otherwise and has thereby tended to knit the university into the very warp of industry.

Research conducted in the universities falls into three broad categories: projects undertaken by the student under the guidance of a professor or committee to meet requirements for an advanced degree; research undertaken by the professor, which may be of a more or less continuous nature; and larger research projects undertaken co-operatively on a faculty or interfaculty basis in university laboratories or in such specialized institutions connected with the university as medical research laboratories, institutes of microbiology and hygiene, science service laboratories and faculties of agriculture.

Some idea of the increase in research undertaken by Canadian universities may be obtained from a comparison of the situation in 1919 with that in 1959. In the former year, two universities—Toronto and McGill—offered graduate courses beyond the master's degree and graduated 11 students; in 1959 Ontario had four, Quebec three and six other provinces each had one major university with graduate courses leading to the Ph.D. degree. They conferred 284 doctorates in course, distributed by fields as follows: biological sciences, including medical and agricultural sciences, 64; engineering and applied science, 19; humanities, 61; physical sciences, 101; and social sciences, 39. Subject matter covered in these courses and other research conducted by university professors and reported in professional journals is encyclopaedic and reflects specialization and variety. Outstanding research in particular fields has become associated with various universities, for example: nuclear research and geophysics in McGill, Queen's, McMaster and Saskatchewan; medical research in such institutions as the Connaught Laboratories and the Montreal Neurological Institute; agricultural research in the western universities; and fisheries research in British Columbia.

Outside financial support for university research comes primarily from four sources: agencies and departments of the Federal Government including the National Research Council and Defence Research Board which provide grants for approved and contracted government-sponsored research; industry which supports both basic and applied research; private foundations which provide grants for approved research, sometimes in selected fields; and provincial governments.

Subsection 5.—Industrial Research

Industrial research in Canada is changing very rapidly. In the past, industry in general was largely unaware of the value of research to its own development and to that of the country, partly because many Canadian companies were subsidiaries of companies in the United Kingdom and the United States and partly because small companies found it impossible to finance their own research. The problem was accentuated by the vast size of the country, the absence of concentration of similar industries and the proximity to the relatively large research facilities of the United States.

However, the emergence of Canada as a highly industrialized society, its entrance into multitudinous fields of production, the rapid growth of many large nation-wide industries, the serving of a discriminating domestic market and the meeting of competition from abroad have had the effect of making Canadian manufacturing establishments research conscious and many of the larger ones now possess competent research organizations. The fields covered by some of these industries are outlined in the 1956 Year Book at pp. 386-389. The research work of the Canadian Pulp and Paper Association, an independent corporation combining efforts of government, university and industry in the expanding field of pulp and paper research, is described in the Forestry Chapter of this volume.

Industrial Research-Development Expenditures.—In 1958 a survey was conducted by the DBS which attempted to measure the extent of the research program undertaken in the preceding year by industrial firms in Canada and to obtain an indication of its direction. A similar survey will be taken in 1960 covering research expenditures in 1959, the results of which will be carried in the 1961 Year Book. In the meantime, summary data from the 1958 survey are repeated here, as being the latest information available on the subject.

Some 2,800 of the larger industrial firms in the country participated in the 1958 survey and the data secured included both direct expenditures and cost of purchasing research-development results from affiliates or other companies or organizations located in Canada and in foreign countries. Data were also obtained on the principal fields in which the research was carried out and on the number of research personnel employed. The magnitude of the research-development costs in 1957 and the increase planned for 1958 give an indication of the size of the program and the direction in which business is searching for new products, for new and more efficient processes and for improvements to existing products and techniques.

The research-development program was reported by industry as totalling \$149,000,000 in 1957 and was estimated at close to \$161,000,000 in 1958. Of the total expenditure in 1957, the major part—amounting to \$125,000,000—was conducted within the companies reporting, an additional \$20,000,000 was spent for research-development done outside Canada, mainly in the United States, and the remaining \$4,000,000 was spent for research done by other companies or organizations in Canada.

1.—Research-Development Expenditures, by Industry, 1957 with Estimates for 1958

Industry	Research Expenditures 1957	Estimated Research Expenditures 1958	Increase or Decrease
	\$	\$	p. c.
Mining, quarrying and oil wells.....	6,279,487	5,260,671	-16.23
Manufacturing—			
Foods and beverages.....	1,883,122	1,976,940	4.98
Rubber products.....	4,307,531	4,459,720	3.53
Textile products.....	1,482,206	1,465,550	-1.12
Wood products.....	148,163	152,300	2.79
Paper products.....	6,213,362	6,536,718	5.20
Iron and steel products.....	4,340,043	4,835,265	11.41
Transportation equipment.....	72,918,827	77,992,404	6.96
Non-ferrous metal products.....	5,793,109	7,110,580	22.74
Electrical apparatus and supplies.....	15,348,440	15,948,267	3.91
Non-metallic mineral products.....	1,713,776	1,817,889	6.08
Products of petroleum and coal.....	7,488,518	9,624,000	28.52
Chemical products.....	12,428,448	14,247,164	14.63
Other manufacturing ¹	1,808,351	2,349,419	29.92
Transportation, storage, communication and public utility operations.....	3,898,800	4,171,300	6.99
Other non-manufacturing ²	3,091,896	3,051,372	-1.31
Totals.....	149,144,079	160,999,559	7.95

¹ Includes tobacco and tobacco products, leather products and miscellaneous manufacturing, construction, health services, engineering and scientific services and trade associations.

² Includes

The following estimates of research-development in the various fields of activity in 1957 show that mechanical, electrical and "other" (mainly aeronautical) engineering, chemistry and metallurgy together accounted for almost 80 p.c. of the total. Expenditures in all engineering fields combined accounted for almost 65 p.c. of the total. Every industry reported some activity in mechanical engineering and at least one other phase of engineering research and also in the chemical research field.

2.—Research-Development Expenditures, by Field of Research, 1957

Field of Research	Amount	Field of Research	Amount
	\$		\$
Chemical engineering.....	10,078,282	Geology, geophysics and other earth sciences.....	1,621,535
Civil engineering.....	935,371	Metallurgy.....	12,879,038
Electrical engineering.....	22,300,993	Medicine.....	2,473,357
Mechanical engineering.....	39,843,632	Agriculture.....	421,383
Other engineering.....	23,438,084	Other.....	4,688,988
Chemistry.....	20,328,760		
Physics.....	10,134,656		
		Total.....	149,144,079

Arrangement of industrial-research expenditures by size group based on annual sales of research-active firms shows that the larger firms with annual sales in excess of \$50,000,000 accounted for the major part of the expenditures, although this size group included only 12 p.c. of the firms maintaining research establishments.

3.—Research-Development Expenditures, by Size Group, 1957

Size Group ¹	Firms	Research-Development Cost	Percentage of Total
	No.	\$	
\$50,000,000 or over.....	57	108,116,078	72.49
\$10,000,000 to \$49,999,999.....	131	22,028,562	14.77
\$ 1,000,000 to \$ 9,999,999.....	221	14,774,187	9.91
Under \$1,000,000.....	46	4,225,252	2.83
Totals.....	455	149,144,079	100.00

¹ Based on annual sales value in 1957.

During 1957 the equivalent of 4,448 professionally trained scientists were employed on research-development projects. The three top industrial groups, in terms of numbers of professionally trained employees, were transportation equipment, electrical apparatus and supplies and chemical products, which together accounted for almost 63 p.c. of the total professional employment in the research field.

Classification of the professional scientists by field and degree of training reveals that for all types of engineers engaged in research there is a greater predominance of professional employees with bachelor degrees. On the other hand, medical scientists, geologists, geophysicists or other earth scientists, chemists, administrators, physicists and agricultural scientists have a greater percentage of the professional employees engaged in research work with doctorate or master degrees than in the engineering field or in the over-all pattern.

In addition the reporting companies employed the equivalent of 7,263 supporting personnel on research-development work, of whom 3,737 were research-development technicians, 802 were skilled craftsmen and 2,724 were other supporting personnel. The average ratio of supporting personnel to professional scientists or engineers for firms conducting research-development was about six to one.

4.—Professional Research-Development Scientists Employed, classified by Field and Level of Training, 1957

Field of Training	Level of Training			Total
	Bachelor	Master	Doctorate	
	No.	No.	No.	No.
Chemical engineers.....	399	53	51	503
Civil engineers.....	40	4	3	47
Electrical engineers.....	771	72	13	856
Mechanical engineers.....	886	25	15	926
Other engineers.....	310	41	16	367
Chemists.....	500	122	255	877
Physicists.....	105	35	45	185
Geologists, geophysicists and other earth scientists.....	10	11	10	31
Metallurgists.....	177	17	22	216
Mathematicians.....	42	6	4	52
Medical scientists.....	22	17	103	142
Agricultural scientists.....	18	2	6	26
Administrators (of research-development).....	67	16	34	117
Unclassified and others.....	86	8	9	103
Totals.....	3,433	429	586	4,448

CHAPTER IX.—AGRICULTURE

CONSPECTUS

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NOTE. —The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Agriculture in Canada, though no longer supreme among the primary industries, is of major importance to the economy of the country as a whole and is still basic to many areas. The area of occupied farmland of 271,756 sq. miles (1956) amounts to only 11.6 p.c. of the total area of the provinces and has shown little increase during the past two decades, but cultivation in this static area has become greatly intensified, producing most of the food products required by a rapidly increasing population and providing surpluses of wheat and other grains, wheat flour, livestock, fruits and vegetables and of many prepared and manufactured agricultural products for world markets. The agricultural economy has been undergoing continual change ever since the pioneer farmer first began to produce more than his requirements and to desire products other than those produced on his own land, but that change has now become extremely marked. The evolution in farming practice under the impact of technological and scientific advances, its commercialization and the development of its greater interdependence on other branches of the economy are outlined in the following special article. Other articles that have appeared in previous Year Books dealing with the historical development of agriculture and with significant features of that progress are listed in Chapter XXVII under the heading "Special Material Published in Former Editions of the Year Book".

THE REVOLUTION IN CANADIAN AGRICULTURE*

Twenty years ago a worker in Canadian agriculture supplied, on the average, enough food for himself and nine other persons. Now he produces enough for himself and twenty-two other persons. This typifies what has commonly become known as the "agricultural revolution". So rapidly is the farming industry changing that in the future it may be possible to look back and find that agriculture was transformed as radically by this revolution as the industrial world was transformed by the industrial revolution of the late eighteenth century.

* Prepared by H. H. Hannam, President and Managing Director, Canadian Federation of Agriculture, Ottawa.

For many decades after Louis Hébert, the first white farmer, began the cultivation of land on what is now the site of the Cathedral of Quebec in Quebec City in the early seventeenth century, farming in Canada developed very slowly. In the early days subsistence farming was practised which means production only for the use of the farmer and his family. As the population gradually increased with the arrival of new settlers, products other than food and clothing were needed by farm families and small industries other than agriculture became established. These non-farmers needed the products of the farms and commercial agriculture involving the sale of agricultural commodities began to replace subsistence farming. Gradually the area devoted to agriculture expanded as land in Eastern Canada was cleared of trees and then more rapidly as settlers moved into the mid-west and began to plough the virgin prairie lands. The decades passed into history and Canada became known to the world as a great agricultural country when wheat from the western plains became the country's first great export staple and other farm products found their way to importing countries in need of them.

The First World War brought intensified demands for food at home and abroad, prices of farm products rose and farm income increased. Farmers called for more labour-saving machinery and equipment, more fertilizers and insecticides and more productive seeds and plants. Canadian agricultural production took a long step forward as new land came under cultivation and farmers increased in number, and the list of countries buying Canadian farm products became longer. However, it was after the start of the Second World War when the North American Continent was faced with the responsibility of providing greatly increased quantities of food and when farm prices began to rise that a virtual revolution started in agriculture in Canada and in the United States. The war ended but the agricultural revolution gained momentum. Resistance to change had been forgotten and the discoveries of farm scientists and engineers were recognized and adopted by increasing numbers of agricultural producers.

The most revealing aspects of this agricultural revolution include the recent decline in the number of farms and in the number of farm workers, the increase in the average size of farms, the changes in the kinds of power used by farmers to produce crops and animal products, the development of specialization and commercialization in agricultural production, the increase in capital invested in farm machinery and equipment, and the larger purchases of fertilizers. The remarkable increase in the production per man hour spent on agricultural enterprises, the increase in yields of crops, in milk per cow and eggs per hen are further evidences of the technical revolution in agriculture.

Farms.—The number of persons living on farms in Canada (according to census figures) increased each decade from 1900 to 1941, though not in proportion to the increase in the population as a whole. However, from 1941 to 1956 the farm population decreased from 3,153,500 or about 27 p.c. of the total population of Canada, to 2,746,800 or 17 p.c. of the total. During those years, the area in farms remained practically unchanged, their number declined from 732,832 to 575,015 but their average size increased from 236.8 acres to 302.5 acres. Almost all the farms in Canada are still family farms, mechanically operated with little hired help.

There are only about 60 p.c. as many workers in agriculture today as there were a decade ago. During the same period the number of farm operators declined about 30 p.c.

Farm Power.—The demands of the war years for greater quantities of food that had to be produced with limited manpower was perhaps the greatest incentive for the utilization of machinery on farms. The farmer's first venture toward mechanization was the purchase of a tractor but that was only the beginning. When a farmer buys a tractor he must also purchase machinery of various kinds if his tractor is to be used efficiently. This new machinery usually includes wider ploughs to turn over more land per day and other larger machinery for preparing the seed beds for farm crops, for weed control and for harvesting. In the years from 1941 to 1956 the number of tractors on farms increased from 152,607 to 388,816 and in the same years the number of horses on farms declined from 2,788,795 to 784,018. On the great western plains it was no longer profitable nor

indeed possible to follow the old method of harvesting and the number of farms using grain combines increased from 18,303 in 1941 to 130,384 in 1956. These larger machines cut down the amount of human labour needed and the time required to do many operations and made it possible to cultivate larger acreages of crops.

Farms with gasoline engines increased by about 20 p.c., and farms with motor trucks increased more than 250 p.c. from 1941 to 1956. At the same time electric power lines were being rapidly extended across the farm lands, particularly in more recent years—in the period 1951 to 1956 the number of farms with electricity increased from 319,383 to 422,604.

Such sources of power have contributed greatly to the reduction in the time required by producers of agricultural commodities to carry on many kinds of work related to their farming enterprises. Only those who have lived on farms can appreciate what the availability of electricity has meant to life on the farm, not only from the production standpoint but in comforts and living conveniences. The farm house now has all the amenities of the city home.

Capitalization and Production per Man.—The trend toward larger farms and the use of labour-saving machines has meant a higher capitalization per farm. Compared with twenty years ago the amount of land under cultivation per farm worker has increased 67 p.c., the livestock population per farm worker has increased 93 p.c. and the volume of power and machinery 213 p.c. Thus, the total of these three forms of capital per farm worker is now almost twice as high as it was twenty years ago. Fertilizers and lime constitute another item of greatly increased expenditure for the farmer. Such outlay was 75 p.c. higher in 1959 than in 1950.

The increase in productivity per man in recent years has been greater in agriculture than in any other Canadian industry, having risen 48 p.c. from 1946 to 1957. In manufacturing the increase was about 40 p.c., in transportation about 34 p.c., in mining about 31 p.c. and in trade only about 7 p.c.

Specialization.—Specialization is becoming more and more a feature of present-day agriculture. Although the farmers on the Canadian prairies have been practising specialization in their wheat economy for a half-century, there has been a growing tendency elsewhere for the individual farmer to give up mixed farming and to specialize in fewer enterprises. This development has in some instances been dictated by climate, soil and distance from markets, but in others it has been prompted by the necessity for reducing unit costs and by the desire to concentrate on scientific production in one field. With the added revenue from large-scale quality production, whether in such specialties as potatoes, poultry, fruits, vegetables, sugar beets or tobacco, the farmer hopes to be able to cover his higher operating costs and capital investment and emerge with a satisfactory net farm income.

There are many examples of the trend toward specialization of agricultural enterprises which have resulted in substantial increases in production. For instance, the number of apple trees on Canadian farms declined from 8,500,000 to 5,400,000 in the years from 1941 to 1956. The days when most farms in the eastern provinces had a few apple trees have passed and apple growing has, to a major extent, become an enterprise in specialized apple-growing areas. Higher yields of apples per tree has been one of the results—in Ontario, for example the production of apples per acre rose from 107.1 bu. in 1951 to 122.8 bu. in 1956.

The number of farms in Canada producing potatoes declined from 1951 to 1956 by nearly 64,000 to about 302,200. However, during the decade from 1948 to 1957, average yields per acre increased in British Columbia from 208 bu. to 275 bu., in Ontario from 133 to 185 bu., in New Brunswick from 237 to 330 bu., and in Prince Edward Island from 225 to 250 bu.

The number of farms in Canada keeping poultry of all ages (except turkeys, geese and ducks) declined from 427,317 in 1951 to 366,869 in 1956, but during that period cash income from poultry meat increased from about \$133,000,000 to \$165,000,000. Eggs

produced per laying hen also increased substantially; in Ontario and Quebec, for example, the increase was about 23 eggs or nearly 15 p.c. Egg production is rapidly becoming a large-scale commercial business. Small farm flocks are being replaced by large commercial production, one plant with mechanical feeding, watering and cleaning equipment raising thousands of layers. The aim in these large-scale operations is low-cost production of a large quantity of high-quality eggs.

In dairying, too, specialization has become prevalent. The pounds of milk produced per cow has risen from 3,935 in 1937 to 4,792 in 1947 and to 5,499 in 1957, and the number of cows per farm has increased considerably. Producers specializing in beef are watching for and accepting the results of new techniques in breeding and in feeding, which includes improved methods of pasture management. Yields per acre of field crops are also increasing as a result of better cultural methods and more productive seeds and plants.

Contract Farming.—Of the many adjustments associated with the technical revolution in agriculture one of the most widely discussed is contract farming, or "vertical integration". There are many examples of this type of development in industry, and though much publicity is now being given to contract farming it is by no means a new development. The growing and marketing of sugar beets, of canning crops, and of certain kinds of seeds under contract has been under way for many years. Fluid milk and beef feeding contracts also go back a long way. What is being hailed as the new development of vertical integration, with varying degrees of approval and alarm, is the invasion of contracting into fields where the growers have traditionally made independent production and marketing decisions, yet where certain kinds of contracts are now removing all management decisions from the control of the producer and making him dependent upon the credit and the market outlets of the trade.

In no industry has vertical integration become so extensively established as in the production of broilers. About 90 p.c. or more of the broiler output in Canada is produced under contracts of one kind or another. These contracts may be agreements between producers and processors for the delivery of broilers at a given time and at a certain price. Another kind of contract may be an arrangement whereby feed dealers advance credit to producers for the purchase of chicks and feed, the farmer making his own marketing arrangements. Contracts may include the type where a feed manufacturer or a processor furnishes chicks and feed to the grower, leases his buildings and equipment, supervises his management and pays him wages for his labour. There are also other arrangements under which the grower shares his profit in return for credit and risk sharing.

Contracts have greatly contributed to the rapid adoption of more efficient practices in the production of poultry meat and have made it available in vastly increased quantities at lower prices to Canadian consumers. In the past ten years since contract farming has been applied to the broiler industry, Canadian production of this commodity has risen to 60,000,000 birds a year. In this specialized industry considerable capital investment is necessary which can be justified only if the operation is on a fairly large scale. In one enterprise there may be as many as 40,000 to 80,000 birds at a time, with four crops produced in one year.

Some features of contract farming have been extended to the production and marketing of other agricultural commodities in recent years, such as hogs, turkeys and eggs.

Canada's Food Needs and Farmer Problems.—The national economy of Canada and its population have made remarkable strides upward in recent years. Gross national production has increased from \$16,300,000,000 in 1949 to about \$34,500,000,000 in 1959 and the population in the same years has risen from 13,500,000 to 17,650,000 persons. The adoption by farmers of new and improved techniques has made it possible for them to provide adequate supplies to satisfy the increased and changing food requirements of the population. With higher purchasing power and a greater appreciation of the need for

more nutritional diet, the Canadian people are eating more per person of the higher priced foods such as fruits and vegetables, meat and eggs and are drinking more milk than they did ten years ago.

While the costs of marketing food between the farmer and the consumer rose 84 p.c. from 1949 to 1958 and food prices rose considerably in that time, non-farm incomes have gone up faster. In fact, these incomes have more than tripled in the past twenty years. Canadians on the average spent only 22.8 p.c. of their 1958 incomes on food compared with 24.4 p.c. in 1949. A week's disposable income in 1958 (for workers in manufacturing industries) would buy 4.1 baskets of food whereas the same week's income in pre-war years (1935-39) would buy only 2.6 baskets of the same foods. Their incomes in 1958 would buy 58 p.c. more food. As a consequence of the increases in the marketing costs of twenty representative foods, Canadian farmers now receive only about 44 cents out of each dollar spent for food by Canadian consumers; in 1951 the farmers' share was 58 cents.

While there have been remarkable advances in the over-all production of agricultural products there are still many farmers with small businesses and low incomes. About 40 p.c. of the farms produce 80 p.c. of the total value of farm production. The problems of the low-income farmers are now receiving much attention by governments and other groups. Part-time farming where the operator obtains most of his income from a non-farm occupation is growing rapidly. More and more families are moving from cities to live in rural areas. Good highways make it possible for the head of the family to drive many miles to town or city employment and in some rural areas there are more non-farm people than farmers.

Besides meeting the domestic food needs of the growing population, Canadian farmers are providing commodities for an increased export trade but, despite these favourable developments in demand, prices of agricultural products have not responded, largely because farm output has been rising faster than the demand at home and abroad.

The technical revolution in agriculture has been the major cause of the production of agricultural commodities beyond the needs of Canadian and foreign buyers. Government price supports have, to a lesser extent, contributed to the development of surpluses of some agricultural products and the existence of surpluses tends to depress market prices of such commodities.

The general trend of agricultural prices has been downward since 1951 while there have been upward trends in non-agricultural prices, in consumer incomes and in business investments. The costs of goods and services required by farmers have increased while agricultural prices have not, which has put the farmers into a situation described as a "cost-price squeeze". As a result of the decline in farmers' net income, Canadian agriculture, in contrast with the buoyant prosperity of many other industries, is in a state of depression. For several reasons it is much more difficult for farmers to move to other lines of work than it is for those in other industries to change their occupations.

The problems of agriculture are not peculiar to Canada. Producers in many countries are experiencing similar troubles. In Canada many programs have been undertaken by the farmers themselves and by farmers in co-operation with governments and international agencies to help solve the existing difficulties of agriculture.

Outlook for Agriculture.—Capital requirements for farming operations will continue to grow in the future with the trend toward larger and fewer commercial farm units. Economies that come from specialized, well-financed and well-managed farms will make it increasingly difficult for the small, poorly managed farms to survive. Management will become a key factor in successful farm operation. Those who cannot develop their farms into economic units will eventually move to industrial occupations and the number of people on farms will continue to decline. The technical advances in agriculture which have been responsible for the production of agricultural products in excess of effective demand will probably delay any rapid improvement in agricultural prices but as population and industrialization in Canada and in food-importing countries continue to advance, as

surpluses disappear and effective demand becomes more pronounced, markets and prices should in time be strengthened. The long-term outlook for Canadian agriculture, therefore, should grow brighter with the passing years.

Section 1.—Federal Government in Relation to Agriculture*

The federal Department of Agriculture dates from Confederation. It was established in 1867 as an outgrowth of a Bureau of Agriculture set up in 1852 by an Act of the Legislature of the Province of Canada. The Department derives its authority from the British North America Act, 1867, which states in part that "in each province, the legislature may make laws in relation to agriculture in the province" and that "the Parliament of Canada may from time to time make laws in relation to agriculture in all or any of the provinces; and any law of the legislature of a province relative to agriculture, shall have effect in and for the province as long and as far as it is not repugnant to any Act of the Parliament of Canada".

A Department of Agriculture with a Minister of Agriculture at its head was accordingly established as part of the Government of Canada. Departments of Agriculture headed by provincial Ministers of Agriculture were also set up by the provincial governments, except in the Province of Newfoundland where agricultural affairs are dealt with by the Agricultural Division of the Department of Mines and Resources. The agricultural affairs of the Yukon and Northwest Territories are administered for the Federal Government by the Territorial Division, Northern Administration Branch, Department of Northern Affairs and National Resources.

Subsection 1.—Services of the Department of Agriculture

Broadly speaking, the activities of the Department of Agriculture may be grouped under three headings: research, promotional and regulatory services, and assistance programs. Research work is aimed at the solution of practical farm problems through the application of fundamental scientific research to all aspects of soil management and crop and animal production. Promotional and regulatory services are directed toward the prevention or eradication of crop and livestock pests, the inspection and grading of agricultural products and the establishment of sound policies for crop and livestock improvement. Assistance programs cover the sphere of soil and water conservation, price stability, provision of credit, and a degree of crop insurance and income security in the event of crop failure. The Department employs a staff of more than 9,000 persons.

Following a reorganization in 1959, the various units were grouped into branches concerned with the broad lines of activity mentioned above. This change superseded an organizational framework that had been in effect since 1937 and was undertaken to bring the Department more closely in line with current needs. Thus the present organization comprises a Research Branch, embracing the activities of the former Experimental Farms and Sciences Services; a Production and Marketing Branch, concerned with regulatory and promotional activities; and an Administrative Branch.

Research Branch.—The Research Branch is the principal research agency of the Department. It conducts a broad program of scientific investigation covering both basic studies and practical attacks on agricultural and forest biology problems. There are seven Research Institutes at Ottawa. Three Research Institutes, nine Regional Research Stations, two Regional Research Laboratories, 27 Experimental Farms, 21 Laboratories, two Forest Nursery Stations, and 20 Substations are located throughout the ten provinces and the Yukon and Northwest Territories.

The Research Branch serves all principal agricultural and forest areas in Canada and co-ordinates its efforts with those of the National Research Council, universities and kindred agencies. One staff group is charged with the planning and co-ordination of the program and another with the administration required to carry it out. Five directors

* Prepared under the direction of S. C. Barry, Deputy Minister of Agriculture, Ottawa.

representing divisions of animals, crops, soils, entomology and plant pathology, and forest biology assist the programming of the work. Three research services—Statistics, Engineering, and Analytical Chemistry, located with the Administrative and Executive group at Ottawa—provide research groups across the country with specialized leadership and service and undertake critical researches or other creative work as required.

The Institutes.—The Institutes are organized on a scientific rather than a problem basis and are engaged primarily on basic research of wide application to agriculture and forest biology. They also carry out related national work such as the identification of plants, insects and pathogens. There are seven Institutes at Ottawa and one each at London, Belleville and Sault Ste. Marie, all in Ontario.

The Animal Research Institute covers the fields of genetics and breeding, nutrition, physiology, biochemistry, and management, and tackles problems in the production of milk, beef, lamb, pork, poultry, eggs and fur.

Plant studies are carried out at the Plant Research and the Genetics and Plant Breeding Research Institutes in taxonomy, physiology, biochemistry, pathology, agrometeorology, weeds, and fruit and vegetable processing and storage. Cytological and genetic studies on cereal, forage, tobacco and horticultural plants are made by the Genetics and Plant Breeding Research Institute with special reference to problems encountered in the breeding programs and the assessment of quality characteristics.

The staff of the Soils Research Institute is engaged in studying genesis and classification, fertility, mineralogy and the organic, physiochemical and physical aspects of soils. This Institute gives leadership to the federal-provincial soil survey program through classification studies and by developing and standardizing analytical methods. It also provides a national soil mapping service.

A major section of the Entomological Research Institute deals with taxonomy, other assignments being in the fields of genetics, physiology, nematology and apiculture. The Institute assembles and maintains the national collection of insects.

The Microbiological Research Institute is mainly concerned with metabolism, nutrition and genetics of bacteria of agricultural significance.

The Dairy Technology Research Institute investigates problems in sanitary milk production and the processing of dairy products and undertakes projects to improve existing dairy products and to develop new ones.

The Pesticide Research Institute at London, Ont., examines chemicals used or intended to be used for insect, disease or weed control and investigates the reason for and the nature of the biological activity of the chemical.

The Biological Control Research Institute at Belleville, Ont., is concerned with efforts to control destructive insect pests and noxious weeds with parasitic and predaceous insects, and with insect disease organisms. It is also the principal importing centre for beneficial insects and for some disease organisms from foreign countries.

The Insect Pathology Research Institute at Sault Ste. Marie, Ont., is the major importing centre for disease organisms. Insect diseases, including viruses, fungi, bacteria and protozoa are studied.

The Regional Institutes, Stations and Services cope with primary problems in various regions in all provinces. Nine major laboratories are working on forest and shade trees, and on forest products diseases and pests in conjunction with provincial forest services and the forest industries.

Other units have undertaken projects assisting in the exploitation of peat bogs, reclamation of marsh land for pasture, propagation of shelterbelt trees and prevention of soil erosion, dryland agriculture, the growing of special crops such as tobacco, and livestock breeding.

The Research Laboratory at Winnipeg, Man., has a world-wide reputation for its contribution in the field of cereal rusts and is the national centre for investigations concerning insects in stored products.

Production and Marketing Branch.—The Production and Marketing Branch represents a consolidation of the former Production Service and Marketing Service and also includes the Agricultural Stabilization Board and the Agricultural Products Board. The regulatory functions of the Department of Agriculture are thus centred in one branch.

The Health of Animals Division administers the Animal Contagious Diseases and the Meat Inspection Acts, and also operates Animal Pathology laboratories. Besides its responsibility in carrying out various disease prevention measures, the Division operates programs for the eradication of bovine tuberculosis and brucellosis and gives health certificates for livestock entering export trade. The Animal Pathology laboratories, in addition to their research function, manufacture diagnostic reagents and biological products and provide analytical and diagnostic services for domestic and wildlife diseases. District laboratories across the country give routine diagnosis and research services.

The Livestock Division administers the Livestock Pedigree Act, Record of Performance for dairy cattle, beef cattle and swine, supervision of race track betting, the grading of meat, wool and fur and the compiling and interpreting of market information.

The Poultry Division carries out the policies of the National Poultry Breeding Program, including Record of Performance for poultry and hatchery inspection, and administers the regulations for the grading of poultry products.

The Fruit and Vegetable Division administers legislation having to do with the grading of fruit and vegetables in both fresh and processed form, maple products, and honey.

The Dairy Products Division is responsible for the administration of legislation covering grades and standards of dairy products, including butter, cheese, concentrated milk products and ice cream.

The Plant Products Division administers Acts and regulations respecting seeds, feed-stuffs, fertilizers and pest control products, conducts field inspection and maintains regional testing laboratories.

The Plant Protection Division is responsible under the Destructive Insect and Pests Act for safeguarding against the introduction of serious plant insects or diseases into Canada or their spread in Canada, for certifying freedom from disease and pests in plant exports, and for seed potato certification.

The Consumer Section helps to promote proper use of Canadian agricultural food products through experimental work, carried on by its home economists, on cooking foods and preserving perishables.

The Transportation, Storage, and Retail Inspection Section administers the Cold Storage Act dealing with the payment of subsidies for the construction of public cold storage; cargo inspectors at the main Canadian ports check the handling of goods moving to export, and inspectors make spot checks on retail outlets to see that food products meet the prescribed standards for quality and grade.

Agricultural Stabilization Board.—The functions and operations of this Board, established in 1958 under the Agricultural Stabilization Act for the purpose of supporting the prices of agricultural products, are described in the Domestic Trade Chapter of this volume in a special article which deals with "Controls over Pricing and Marketing of Farm Products other than Grain".

Agricultural Products Board.—The Agricultural Products Board, first established in 1951 under the Emergency Powers Act, was reappointed under the Agricultural Products Board Act dated Jan. 23, 1952. The Board was established as an auxiliary or facilitating body for the purpose of purchasing, selling or delivering agricultural products pursuant to any agreement or contract made by the Government of Canada as may seem appropriate, as agent for the Agricultural Stabilization Board.

Administration Branch.—Besides its general responsibility for the business management of the Department, the Administration Branch embraces the division concerned with Information and Economics. For the present, rehabilitation and assistance programs are also associated with this Branch.

The Economics Division collects, analyses and interprets economic information required to form and administer departmental policies and programs. It conducts economic surveys and research designed to improve agricultural production, marketing, and farm living conditions. The Division acts as an economic and statistical research agency for the Agricultural Stabilization Board, the Prairie Farm Rehabilitation Administration and other bodies, assisting in any economic undertaking with which the Department is concerned.

The Information Division gathers and publishes information arising from research work and the development and regulatory programs of the Department. It employs all the recognized media—printed publications, press and radio releases, motion pictures and television. In addition, the Division operates the central library of the Department and a system of field libraries located at major research centres of the Department across Canada.

Subsection 2.—Farm Credit and Assistance

The Federal Government has made provision for the extension of credit to farmers under the Farm Credit Act (replacing the Canadian Farm Loan Act) and under the Farm Improvement Loans Act. Cash advances are made to grain producers under the terms of the Prairie Grain Advance Payments Act. Certain financial assistance in event of crop failure is provided by the Prairie Farm Assistance Act. Also, following the drought in Western Canada in 1957, which resulted in a reduced crop, arrangements were made under the Western Grain Producers Acreage Payment Regulations (Order in Council PC 1958/1442) for paying to each grain producer a sum of \$1 for each acre seeded in 1958, up to the amount of \$200. Total payments under these regulations amounted to approximately \$40,000,000. These measures, with the exception of the one-time acreage payment regulations, are discussed in detail in the following paragraphs.

The Canadian Farm Loan Act and the Farm Credit Act.—Long-term farm mortgage credit is available to Canadian farmers for the purchase of land, livestock and farm equipment, to make farm improvements and to pay debts, under the provisions of the Farm Credit Act enacted by Parliament on July 18, 1959 and proclaimed in force on Oct. 5, 1959. This Act repealed the Canadian Farm Loan Act and established the Farm Credit Corporation as an agent of the Crown in right of Canada to administer a system of long-term mortgage credit as the successor to the Canadian Farm Loan Board established in 1929 under the Canadian Farm Loan Act.

At the time of repeal of the Canadian Farm Loan Act, the maximum loan for all legitimate farm purposes was limited to 65 p.c. of the appraised value of the farm taken as security, not exceeding \$15,000, repayable within 30 years. The new Act gives the Farm Credit Corporation substantially broader lending powers. Under Part II of the new Act, the Farm Credit Corporation may lend up to 75 p.c. of the appraised value of the farm taken as security, not exceeding \$20,000, repayable within 30 years. In addition to loans under Part II, the Corporation is empowered to make loans to young farmers, aged 21 to 44 inclusive, having five years experience in farming, to enable them to become established on economic farm units. These loans are based on first mortgage security of farm land and additionally, where required, on the security of livestock and farm equipment. The maximum Part III loan may not exceed 75 p.c. of the value of the land and chattels, nor \$27,500. That portion of the loan based on chattel security is repayable within 10 years and the remainder of the loan within 30 years. A loan under Part III is additionally secured by insurance on the life of the borrower and his farming operations are subject to supervision by the Corporation until the loan is reduced to 65 p.c. of the value of the farm land. The interest rate on all loans is fixed at 5 p.c. by the Act.

Funds for lending are borrowed at current interest rates from the Minister of Finance. The aggregate amount of loans from the Minister at any time outstanding may not exceed 25 times the capital of the Corporation. On establishment, the Corporation succeeded to \$5,000,000 capital of the Canadian Farm Loan Board and the Act fixes the authorized capital at \$8,000,000.

In the fiscal year ended Mar. 31, 1959, the Canadian Farm Loan Board approved 4,805 loans for a total of \$30,144,950 as compared with 3,702 loans for a total of \$21,278,450 in the preceding year. At Mar. 31, 1959, the total amount outstanding in loans was \$91,298,119, as compared with \$68,490,523 for the previous year. This amount was secured by 25,471 first mortgages and 891 second mortgages.

1.—Loans Approved and Disbursed under the Canadian Farm Loan Act, Years Ended Mar. 31, 1950-59

NOTE.—Figures for previous years are given in the corresponding table of former Year Books beginning with the 1940 edition.

Year Ended Mar. 31—	Loans Approved					Loans Paid Out		
	First Mortgage		Second Mortgage		Total Amount	First Mortgage	Second Mortgage	Total Amount
	No.	Amount	No.	Amount				
		\$		\$	\$	\$	\$	\$
1950.....	1,949	4,715,500	801	473,900	5,189,400	4,480,779	462,150	4,942,929
1951.....	1,796	4,312,450	680	409,550	4,722,000	4,288,866	404,213	4,693,079
1952.....	1,437	3,929,500	494	308,900	4,238,400	4,131,141	337,951	4,469,092
1953.....	1,685	5,458,750	559	393,550	5,852,300	4,766,149	342,410	5,108,559
1954.....	2,091	7,366,800	591	449,950	7,816,750	6,606,323	394,216	7,000,539
1955.....	2,145	7,902,100	395	323,400	8,225,500	7,849,663	357,339	8,207,002
1956.....	2,057	8,126,900	204	182,750	8,309,650	8,038,877	215,445	8,254,322
1957.....	2,921	13,978,700	—	—	13,978,700	13,154,066	29,926	13,183,992
1958.....	3,702	21,278,450	—	—	21,278,450	19,343,560	—	19,343,560
1959.....	4,805	30,144,950	—	—	30,144,950	28,368,239	26	28,368,265

2.—First Mortgage Loans Approved under the Canadian Farm Loan Act, by Province, Years Ended Mar. 31, 1957-59

NOTE.—Figures for previous years are given in the corresponding table of former Year Books beginning with the 1940 edition.

Province	1957		1958		1959	
	No.	\$	No.	\$	No.	\$
Prince Edward Island.....	136	445,800	142	544,200	150	567,800
Nova Scotia.....	47	221,350	54	290,500	49	219,450
New Brunswick.....	60	234,050	67	325,150	71	303,650
Quebec.....	139	707,350	118	667,250	154	891,650
Ontario.....	672	3,916,100	1,084	7,980,500	1,299	10,702,350
Manitoba.....	284	1,346,200	412	2,133,100	454	2,505,600
Saskatchewan.....	897	4,212,600	1,122	5,760,900	1,510	8,665,550
Alberta.....	591	2,381,700	590	2,841,500	961	5,125,100
British Columbia.....	95	513,550	113	735,350	157	1,163,800
Totals.....	2,921	13,978,700	3,702	21,278,450	4,805	30,144,950

The Farm Improvement Loans Act.—The Farm Improvement Loans Act, administered by the Department of Finance, is designed to provide credit by way of loans made by the chartered banks to assist in almost every conceivable purchase or project for the improvement or development of a farm and includes the purchase of agricultural implements, the purchase of livestock, the purchase and installation of agricultural equipment

or a farm electric system, the erection or construction of fencing or works for drainage on a farm, and the construction, repair or alteration of farm buildings including the family dwelling. Credit is provided on security related to the purchase or project and on terms suited to the individual borrower.

The legislation, originally operative for three years (1945-48), has been continuous by way of extensions usually for three-year periods. In 1959 the Act was extended for a further period commencing Apr. 1, 1959 and ending June 30, 1962. By the latter extension, full-time beekeepers were made eligible for loans and the maximum loan or amount available at any one time to a borrower was increased from \$5,000 to \$7,500. The maximum term of a loan and interest rate remain at ten years and 5 p.c. simple interest, respectively. The borrower is required to provide from 10 p.c. to 40 p.c. of the cost of his purchase or project, depending on the loan category to which it belongs. The Federal Government guarantees each bank against loss sustained by it up to an amount equal to 10 p.c. of loans granted by it in a lending period. This guarantee does not apply to any loan made after the aggregate of all loans made by all banks in a given period reaches an amount fixed by statute. The current maximum stands at \$300,000,000. By Dec. 31, 1958, 1,282 claims amounting to \$835,772 had been paid under the guarantee since the inception of the Act, representing a net loss ratio of less than one-tenth of one percent after recoveries have been taken into account.

By the end of 1958, \$674,433,667, or 82.9 p.c. of the total loans made had been repaid. The position at that time was as follows:—

<i>Period</i>	<i>Loans Outstanding</i>	<i>P.C. of Total Loans Outstanding</i>
1945-48.....	4,965	0.02
1948-51.....	296,342	0.2
1951-53.....	1,526,204	0.9
1953-56.....	9,343,777	4.2
1956-59.....	127,894,141	57.9
TOTALS.....	139,065,430	17.1

3.—Loans Made under the Farm Improvement Loans Act, by Purpose, 1957 and 1958, with Cumulative Totals from 1945

Purpose	1957		1958		Cumulative Totals 1945-58	
	Loans	Amount	Loans	Amount	Loans	Amount
	No.	\$	No.	\$	No.	\$
Purchase of agricultural implements.....	48,091	58,094,091	55,818	71,787,652	620,393	710,161,684
Construction, repair or alterations of, or making additions to any buildings or structure on a farm.....	3,974	6,000,234	5,910	10,004,024	40,873	53,886,979
Purchase of livestock.....	4,557	4,272,400	6,505	7,041,710	38,426	33,796,122
Works for the improvement or development of a farm designated in the regulations.....	908	647,420	1,427	1,090,377	18,439	11,796,056
Irrigation systems.....	109	164,619	142	228,372	251	392,991
Purchase or installation of agricultural equipment or a farm electric system and the alteration and improvement of a farm electric system.....	216	133,735	337	265,317	4,216	2,658,448
Erection or construction of fencing or works for drainage on a farm.....	133	115,375	139	122,288	1,077	806,813
Totals.....	57,988	69,427,874	70,278	90,539,743	723,675	813,499,097

4.—Loans Made under the Farm Improvement Loans Act, by Province, 1957 and 1958, with Cumulative Totals from 1945

Province	1957		1958		Cumulative Totals 1945-58	
	Loans	Amount	Loans	Amount	Loans	Amount
	No.	\$	No.	\$	No.	\$
Newfoundland.....	50	58,558	46	71,755	351	442,955
Prince Edward Island.....	961	1,047,520	1,127	1,265,038	11,184	10,608,375
Nova Scotia.....	779	852,780	871	989,452	8,126	7,623,552
New Brunswick.....	577	688,202	783	946,602	6,781	7,376,254
Quebec.....	9,631	11,862,445	12,187	16,442,747	71,733	84,880,794
Ontario.....	10,438	13,043,018	12,796	17,735,159	108,799	125,138,156
Manitoba.....	6,117	7,104,417	7,164	8,876,186	88,036	94,691,324
Saskatchewan.....	13,581	15,856,983	16,077	19,766,505	210,591	242,206,106
Alberta.....	14,257	16,923,732	17,335	21,793,131	197,186	217,430,807
British Columbia.....	1,597	1,990,219	1,892	2,653,165	20,888	23,100,770
Totals.....	57,988	69,427,874	70,278	90,539,743	723,675	813,499,097

Prairie Grain Advance Payments Act.—This Act, which came into force on Nov. 25, 1957, provides for an advance payment to producers for threshed grain (wheat, oats and barley) in storage other than in an elevator and prior to delivery to the Canadian Wheat Board, exclusive of grain deliverable under a unit quota. Advance payments of 50 cents per bu. of wheat, 25 cents per bu. of oats and 35 cents per bu. of barley are made, subject to certain restrictions as to quota and acreage. Maximum advance payment per application is \$3,000.

At Dec. 31, 1959, the following advance payments had been made:—

Period	Applications	Total Advance	Average Advance
	No.	\$	\$
Aug. 1, 1957—July 31, 1958.....	50,412	35,203,467	698
Aug. 1, 1958—July 31, 1959.....	45,341	34,369,653	758
Aug. 1, 1959—Dec. 31, 1959.....	43,004	33,789,473	785

Repayment is effected by deducting 50 p.c. of the initial payment for all grain delivered subsequent to the loan, other than for grain delivered under a unit quota. The amounts deducted are paid to the Board until the producer has discharged his advance.

At Dec. 31, 1959, refunds had been made as follows:—

Period	Total Refunded	Total Advance Outstanding	Percentage Refunded
	\$	\$	
Aug. 1, 1957—July 31, 1958.....	35,172,468	30,999	99.9
Aug. 1, 1958—July 31, 1959.....	34,057,795	311,858	99.0
Aug. 1, 1959—Dec. 31, 1959.....	10,057,271	23,732,202	29.7

Prairie Farm Assistance Act.—The Prairie Farm Assistance Act, passed in 1939, provides for direct money payments by the Federal Government on an acreage and yield basis to farmers in areas of low crop yield in the Prairie Provinces and in the Peace River area of British Columbia. The purpose of the Act is to assist in dealing with a relief problem which the provinces and municipalities could not do alone and to enable the farmers to put in a crop the following year.

Payments for the 1958 crop year at July 31, 1959, totalled \$23,103,462, divided by provinces as follows: Manitoba, \$1,167,341 in 6,022 awards; Saskatchewan, \$14,999,630 in 48,032 awards; Alberta, \$6,801,756 in 27,789 awards; British Columbia, \$134,735 in 654 awards.

All farmers contribute to the program to the extent of 1 p.c. of sales of wheat, oats, barley, rye, flax and rapeseed. The levy for the crop year 1958-59 amounted to \$6,674,000. Since 1939, levies have raised \$113,985,190 and \$227,543,546 has been paid out in 1,036,967 awards. The additional funds required for payments are provided from the federal treasury without interest.

Subsection 3.—Canada's Relationship with FAO

The Food and Agriculture Organization of the United Nations, currently consisting of 77 member governments, was created for the purpose of promoting national and international action to improve the efficiency of the production, processing, distribution and utilization of all food and agricultural products, with the aim of assisting all countries to raise the levels of nutrition and standards of living of their people. It collects and disseminates information to help its member governments and others who wish it to improve their methods of cultivation, fishing, forestry, marketing, agricultural credit and so on. It is called upon to contribute in many ways to the development and co-ordination of national agricultural programs and policies.

The Conference of the FAO meets every two years and its Council, made up of 25 member nations, meets about twice a year or whenever necessary. The Conference reviews the world situation in food, agriculture, fisheries and forestry as well as the operation of the FAO Secretariat. The Council, meeting more frequently, keeps an eye on price trends and supplies.

The actual day-to-day work of the Organization is carried out by about 1,500 staff members assigned to Headquarters and the five Regional Offices. Over 50 nationalities are represented on the staff. The Organization has been reorganized during the past two years and is divided into two departments consisting of 10 technical divisions covering the following: Land and Water Development; Plant Production and Protection; Animal Production and Health; Rural Institutions and Services; Forestry and Forest Products; Fisheries; Statistics; Economic Analysis; Commodities; and Nutrition; and one service department which deals with matters related to administration of meetings and protocol and includes divisions covering information, publications, preparation of reports on rural legislation and a library.

There are also over 50 committees consisting of technicians representing member nations who are interested in specific problems. These include: the Committee on Commodity Problems; the International Rice Commission; the FAO Desert Locust Control Committee; the Fisheries Council; FAO Liaison Committee on Fishery Products Technology; European Commission for the Control of Foot-and-Mouth Disease; the Regional Forestry Commissions; etc.

FAO also administers a Technical Assistance Program with about 435 technical assistance experts assigned to field projects in nearly 65 countries or political subdivisions. New activities have come out of the recently established United Nations Special Fund. By the end of 1959, FAO had been asked to administer five major capital projects, four of them related to water management. FAO's current operating resources are \$9,225,500 per year. In addition, an amount almost equal to the regular budgetary total is allocated to FAO by the United Nations Technical Assistance Administration and the Special Fund.

Technical Activities.—FAO acts as an instrument of collaboration in the effort to control pests and disease. Throughout the Middle East, international control and prevention measures, co-ordinated by FAO, are aimed at controlling locusts. The European Commission for the Control of Foot-and-Mouth Disease, created in 1952 under FAO auspices, is working toward the complete eradication of the disease. Another field for

greater international action is in the development of river basins and watersheds affecting several countries. Along with other UN agencies, FAO is studying the land and water development potentialities of the Mekong Valley at the request of the Governments of Viet-nam, Cambodia, Laos, and Thailand. Studies are being made in respect of fishing boats and fish harbours. The items mentioned are only a few illustrations of the scope of the technical activities of the FAO.

Commodity Review.—The work of the FAO Conference, the Council and the Committee on Commodity Problems in the commodity field may be summarized as follows: (1) making a periodic review of the commodity situation; (2) providing a forum for discussing problems, exchanging views and studying national policies; (3) sponsoring specialized commodity study groups; (4) reviewing proposals for action and making recommendations; (5) publishing reports on commodity policies and developments; (6) co-operating with other international commodity agencies in the preparation and review of commodity situation reports and in the consideration of proposals for action programs.

A major activity is the study of the problem of commodity surpluses by the Sub-Committee on Surplus Disposal located in Washington, which is concerned with ways and means of using surpluses to establish national food reserves and/or to finance economic development in under-developed countries. Special aspects of the surplus problem are also the concern of other FAO commodity groups, such as the Group on Grains which has undertaken study of the causes of the present imbalance in the wheat and coarse grains situation, and the commodity groups concerned with rice, copra, cocoa, dairy products and citrus fruits.

Canada and the FAO.—Canada's interest in the FAO began with the Hot Springs Conference. The United Nations Interim Commission on Food and Agriculture was established by this Conference and was headed by a Canadian. It laid the groundwork for the first FAO Conference which was held at Quebec City in 1945. In the same year the Canadian Parliament passed the Food and Agriculture Organization of the United Nations Act which provided for the carrying into effect of the "Agreement for a Food and Agriculture Organization of the United Nations between Canada and certain other Nations and Authorities". This Act approves the Constitution of the Food and Agriculture Organization and empowers the Governor in Council to make such appointments, establish such offices, make such Orders in Council, and do such things as appear necessary for carrying out the provisions of the Constitution.

Canada is a member of the Council, the Committee on Commodity Problems (CCP), the Consultative Sub-Committee on Surplus Disposal, and the FAO Group on Grains, the Committee on Constitutional and Legal Matters, and is participating in a number of working parties sponsored by the FAO dealing with a variety of problems.

Over 100 Canadians have been on FAO technical assignments since 1951. For some of these experts there were repeat performances. Others have been invited to participate on panels of experts dealing with nutrition, plant protection, forestry, fisheries and atomic energy. A number of Canadians are on the staff at Headquarters in Rome.

Early in 1946, member nations were invited to establish the National FAO Committees to maintain liaison between FAO Headquarters and their respective governments. In accordance with this request a Canadian Interdepartmental FAO Committee was formed to provide a link between the FAO and the Canadian Government on questions pertaining to FAO. The Committee is composed of senior government officials representing the Departments of Agriculture, Fisheries, Northern Affairs and National Resources (Forestry), National Health and Welfare (Nutrition), Trade and Commerce, External Affairs, Finance, and the Dominion Bureau of Statistics.

Section 2.—Provincial Governments in Relation to Agriculture*

Subsection 1.—Agricultural Services

Newfoundland.—Government agricultural services in Newfoundland are operated by the Agricultural Division of the Department of Mines and Resources. The Division is in charge of a Director who is assisted by a staff of 21 officers. For purposes of administration, the province is divided into nine districts. A fieldman with permanent headquarters is located in each district except Labrador, where the officer is resident for the summer only. Officers in charge of different phases of agricultural development visit each district on assignments from the St. John's office.

Departmental policies in support of the agricultural industry include: a bonus of \$125 an acre on land cleared by privately owned equipment; the distribution of ground limestone at a subsidized rate; the payment of bonuses on purebred sires; and financial assistance to agricultural societies, marketing organizations and exhibition committees. An inspection service is provided for poultry products, vegetables and blueberries, production of the latter being encouraged by the burning of suitable berry areas and the improvement of roads and trails leading to them. Small fruit development is promoted through the distribution of quality foundation stock.

Every encouragement is given to the production of livestock. An experimental sheep flock is maintained. Poultry and beef production have increased with favourable marketing conditions and with departmental assistance and loans under the Provincial Farm Development Loan Act. A veterinary supervises the health of animals program and the joint federal-provincial project for the eradication of bovine tuberculosis.

The Agricultural Division co-operates with the Department of Education in furthering the 4-H Club movement in the province and accepts responsibility for all projects pertaining to agriculture.

Prince Edward Island.—The activities of the provincial Department of Agriculture are suggested by its staff which includes, in addition to the Minister and Deputy Minister, a Dairy Superintendent and Assistant, two Check Testers, two Dairy Herd Improvement Promoters, a Director of Veterinary Services and eight subsidized practising Veterinarians, a Horticulturist, a Soil Analysis Assistant, a Poultry Fieldman, an Economist, two Agronomists, a Director of 4-H Clubs, a Nursery Supervisor, and a Director, an Assistant Director and two Extension Workers of Women's Institutes.

Nova Scotia.—The Department of Agriculture and Marketing endeavours to "help the people to help themselves" through strengthening member interest in such organizations as the Nova Scotia Federation of Agriculture, Nova Scotia Fruit Growers' Association, various agricultural co-operative organizations, credit unions and producer organizations. The Department is assisted by the Nova Scotia Advisory Committee on Agricultural Services which has been established to promote agricultural policies and projects of the federal and the provincial Departments of Agriculture. The Committee meets quarterly to determine how the work of these Departments may be co-ordinated and directed through integrated agricultural policies and with a minimum duplication of services.

New Brunswick.—Provincial government agricultural policy in New Brunswick is directed by the Department of Agriculture. The Department is headed by the Minister of Agriculture who is assisted by a Deputy Minister and the Directors of the following services: extension, livestock, dairy, veterinary, poultry, horticulture, field husbandry, plant protection and promotion, agricultural engineering, home economics, Credit Union Co-operative Association, agricultural education and agricultural societies.

Quebec.—The Department of Agriculture of Quebec comprises 11 services: rural education, rural economy, extension, animal husbandry, horticulture, field husbandry, information and research, home economics, animal health, rural engineering, and the secretariat. Each service is divided into sections dealing with particular problems.

* Information supplied by the agricultural authorities of the various provinces.

The Department also includes many other special organizations such as the Research Council, the Dairy Industry Commission, the Dairy School of St. Hyacinthe, the Provincial Extension Farm (Deschambault), the Fur Bearing Animals Extension Farm (St. Louis de Courville). The Farm Credit Bureau, the Quebec Sugar Refinery (St. Hilaire), the Provincial Veterinary School (St. Hyacinthe) and the Office of Rural Electrification are also under the authority of the Minister of Agriculture.

The annual competition for the Agricultural Merit Order, organized in 1890, is held successively in each of five regions. Each contest lasts five years and covers various farm products; its objective is to ascertain the personal merit of the competitors who have most distinguished themselves in the agricultural field and can serve as examples. County Farm Improvement Contests have for 30 years promoted better methods of culture designed to increase farm income and 7,530 competitors have benefited from them.

The Drainage Service deals with soil improvement or land reclamation by renting equipment at very low rates to farmers who wish to improve their crop lands. The Department of Agriculture also gives assistance to such projects in the form of grants. Soil improvement measures include large drainage projects carried out by the Department and smaller projects carried out by groups of farmers with government help. In 1958, 44,209 farmers benefited from help given by this service.

Various forms of assistance are offered towards improvement of crops and livestock. An artificial insemination station operates at St. Hyacinthe for the benefit of breeders' clubs, and plant breeding stations for cereal and forage crops, vegetables and small fruits are maintained in a number of localities. Trained specialists are employed in the work of controlling plant and animal pests and diseases; the main laboratories are situated at Quebec City and field laboratories are located in other districts.

Agricultural co-operation is widespread in Quebec. There are 508 co-operatives with 69,829 members and 89 agricultural societies with 28,452 members to serve local interests and organize county exhibitions. There are also 713 Cercles de Fermières (Women's Institutes) in operation with a membership of 36,903; 425 farmers' clubs with a membership of 20,182; and 316 junior farmer clubs in which 8,607 young boys and girls are working on numerous practical agricultural projects.

The Farm Credit Bureau was established in 1936. By December 1958 the Bureau had made 56,660 loans to farmers amounting to a total of \$165,427,000; 26,531 of these loans were for the establishment of young men on farms.

An Agricultural Research Council was established by the Department in 1957. It is a consultative body composed of professors from the senior agricultural colleges of the province. It has no laboratories but encourages research in all fields of agriculture by means of subsidies to the faculties of agriculture of the provincial universities to be carried out under the supervision of the university staffs. The Council also has a scholarship plan to encourage the education of young agronomists. The findings of research projects undertaken under the auspices of the Department of Agriculture are published by the Council in *Recherches agronomiques*.

Ontario.—The Ontario Department of Agriculture provides financial assistance and administrative services through its Head Office, nine Branches, two Experimental Farms, and through research and extension work carried out at the Ontario Agricultural College, the Ontario Veterinary College, Macdonald Institute, Western Ontario Agricultural School, the Kemptville Agricultural School and the Horticultural Experiment Station.

The Department is divided into two main Divisions—the Division of Production and the Division of Marketing. Each is under the direction of an Assistant Deputy Minister, directly responsible to the Deputy Minister. The Division of Production is composed of the Live Stock Branch, Extension Branch, Agricultural and Horticultural Societies Branch, Field Crops Branch, Farm Economics and Statistics Branch, and the

Milk Production Program. The Division of Marketing administers the affairs of the Markets Branch, Dairy Branch, Co-operative Loans Board, Milk Industry Board, Farm Products Marketing Board, Ontario Stock Yards Board, Ontario Food Terminal Board, and the Farm Products Inspection Service.

The Live Stock Branch promotes livestock improvement policies with particular attention to the health of animals, gives support to purebred livestock associations, licenses artificial insemination centres, community sales, wool warehousemen and egg grading stations.

Through a staff of Agricultural Representatives, one of whom is located in each county and district, the Extension Branch carries on an educational and extension service, gives leadership to 4-H Club work and to the Ontario Junior Farmers' Association. This Branch also administers policies providing assistance to farmers and settlers in northern Ontario in connection with land clearing and breaking and improvement of farms and livestock. The Home Economics Service, which is part of the Extension Branch, gives leadership to organized activities of rural women.

The Agricultural and Horticultural Societies Branch provides assistance to agricultural and horticultural fairs and exhibitions, ploughing matches and other competitions and administers the Community Centres Act.

The Field Crops Branch assists in the development of good cultural practices and promotes the use of improved strains of seed and works for the improvement of pastures. It also administers the Weed Control Act.

The Farm Economics and Statistics Branch carries on research in farm business including cost analysis, marketing, and land use. In co-operation with the Dominion Bureau of Statistics it gathers and publishes statistics of agricultural production.

The Markets Branch administers the Farm Products Marketing Act; the Farm Products Grades and Sales Act; the Co-operative Loans Act; the Grain Elevator Storage Act; and the Farm Products Containers Act.

The Dairy Branch provides an inspection, instruction and supervision service to all dairy factories and promotes the production of clean milk on farms. The Milk Industry Board of Ontario, functioning under the authority of the Milk Industry Act, regulates and supervises the marketing of milk and cream.

The Information Branch prepares and distributes—through press, radio, television and publications—information of value to producers and consumers of Ontario's farm products.

The Ontario Agricultural College, including Macdonald Institute and the Ontario Veterinary College, all located at Guelph, provides research and extension services to Ontario agriculture, as does the Horticultural Experiment Station at Vineland, the Western Ontario Agricultural School and Experimental Farm at Ridgeway, and the Kemptville Agricultural School at Kemptville. Demonstration Farms in northern Ontario, one at New Liskeard and another at Sault Ste. Marie, are operated for the demonstration of methods adaptable to the area concerned, present emphasis being on beef cattle production. Supervision of the schools and colleges, experimental farms, and the Ontario Telephone Authority, is the direct responsibility of the Deputy Minister of the Department.

Manitoba.—The Department of Agriculture serves Manitoba through the following branches: agricultural extension; livestock; dairy; soils, crops and weeds administration; agricultural publications, statistics and radio and information service; co-operative services; and the provincial veterinary laboratory.

The Extension Service deals with agricultural economics, horticulture, poultry, agricultural engineering, beekeeping, 4-H Clubs and women's work, and has specialists devoting attention to these subjects. Meetings, field days and short courses are held. Thirty-five agricultural representatives are located throughout the province, each serving from one to five municipalities; 12 home economists serve designated areas.

The Live Stock Branch administers the Animal Husbandry Act, develops and administers policies that encourage the improvement and production of livestock, and works in close co-operation with the Veterinary Laboratory Service and the federal Health of Animals Division in the control of livestock diseases.

The Dairy Branch administers the Dairy Act, supervises the grading of cream, inspects creameries and cheese factories, gives instruction in cheese and butter making, issues licences to makers of dairy products and to cream graders and conducts a dairy-cost study among milk producers. Extension activities include addressing meetings and preparing articles and leaflets on dairy farm problems.

The Soils and Crops Branch deals with grain and forage crops, conservation and fertility and provides liaison between the Government of Manitoba and the Government of Canada in regard to PFRA projects. The Branch develops and administers policies that encourage good field crop husbandry and conservation practices. The Weeds Section directs the activities of 18 municipal weed control units comprising 70 rural municipalities engaged in eradicating deep-rooted, persistent, perennial weeds; supervising weed demonstrations; investigating weed problems; conducting weed surveys; and preparing weed literature, mounted weed specimens, etc.

The Agricultural Publications and Statistics Branch publishes and distributes annually approximately 100,000 bulletins, circulars, posters, leaflets, etc. It provides the public with agricultural statistics relating to Manitoba agriculture, and maintains an information service which uses the media of the press, radio and TV.

The Co-operative Services Branch takes care of the registration and supervision of co-operatives and credit unions and the administration of the Acts governing them. The Branch also collects and compiles statistics on co-operative activity throughout the province.

The Veterinary Laboratory operates a diagnostic laboratory for animal diseases, the services of which are available to veterinarians and livestock owners.

Saskatchewan.—The Saskatchewan Department of Agriculture is organized in the following branches and services.

The Administration Branch handles general staff records and accounts. Data on crop conditions, production, marketings and income are collected and farm information dispensed daily over seven private radio stations.

The Agricultural Representative Service has a field staff of 38 agricultural representatives, four area supervisors and specialists in farm management, farm mechanics, and visual aids. This extension field staff serves all Branches of the Department as well as the other agencies operating within the Co-operative Agricultural Extension Program. Agricultural representatives are active in all federal, provincial and university farm services. In farm labour matters, co-operation is maintained with the federal Department of Labour and the National Employment Service in directing annual movements of farm labour in and out of the province. Agricultural representatives work through Agricultural Conservation and Improvement Committees in each rural municipality and local improvement district to supply the farmer with scientific and practical information. Committees study local farm problems and initiate improvement programs. Through an Earned Assistance Program the Department pays one-half the cost of local group development projects.

The Animal Industry Branch has four divisions. The Dairy Division administers dairy herd improvement programs and assists producers with management and production problems; inspects and licenses dairy manufacturing and frozen-food locker plants; and administers dairy, locker plant and margarine legislation. The Livestock Division encourages the use of suitable animals for breeding purposes by the establishment of purebred sire areas and by assistance in the purchase and distribution of stallions, bulls, boars and rams. It registers brands, licenses livestock dealers and agents and promotes programs on insect control, feeding and management. The Poultry Division maintains flock testing and turkey grading services; administers an approved hatchery policy; licenses produce

dealers and poultry buyers, hatcheries and hatchery agents. It also assists with poultry shows and field days and otherwise promotes flock improvement. The Veterinary Division assists students in veterinary science under a scholarship plan, administers disease testing and vaccination programs and co-operates with Federal Government officials and local veterinarians in disease prevention and control.

The Conservation and Development Branch provides engineering services for irrigation development, usually in co-operation with the Federal Government, and for drainage programs and projects. Reclamation of land by drainage, development of misused land and under-utilized land, and construction of provincial community pastures all come within its jurisdiction. The Branch provides engineering assistance to conservation and development areas, water users' districts, and irrigation districts in connection with water control projects.

The Lands Branch administers all Crown, school, and Land Utilization Board lands except forest reserves and parks in the settled area of the province; classifies it according to the use for which it is best suited; disposes of such lands under long-term leases; secures land control for land utilization projects; supervises new settlement projects; pays for clearing and breaking by farmers on provincial leases; and operates provincial community pastures.

The Plant Industry Branch organizes and administers programs for crop improvement and crop protection, and advises on seed and crop improvement, soil conservation, horticultural problems, weed control and management of irrigated land. The improvement of grassland is promoted through a forage crop program. The Seed Plant Division carries on custom cleaning of forage seeds and registered cereals. The Apiary Division advises on beekeeping and honey production, supervises and carries on continuous inspection.

The Agricultural Machinery Administration, established in 1958, carries out a testing service on farm machinery as well as an inspection service, and licenses dealers in farm machinery.

Alberta.—The Alberta Department of Agriculture is organized in the following branches and services.

The Field Crops Branch administers programs and policies relating to crop improvement, soil conservation and weed control, crop protection and pest control, horticulture and apiculture. Agricultural Service Boards have been organized in municipal districts to assist with agricultural programs, and the Department of Agriculture is represented on each Board.

The Live Stock Branch aids in maintaining the quality of herds and flocks by assisting farmers in securing purebred herd sires and assists artificial breeding associations in the breeding of dairy cattle. The Branch also supervises livestock feeder associations and administers legislation relating to stock inspection, brands, domestic animals and the sale of horned cattle.

The Dairy Branch administers the Dairymen's Act and the Frozen Food Locker Act. Grading and purchasing of raw produce by all dairy plants are under regulation, as are standards of construction, manufacture, processing, sanitation, and temperature control for dairies and frozen food lockers. A regular cow-testing service is available to dairy producers and the Branch laboratory conducts chemical and bacteriological analyses needed for industrial directives. Yearly cost studies and dairy farm management services are in operation in the principal milk-producing areas.

The Poultry Branch carries on programs for the improvement of poultry husbandry and supervises flock approval for the control of pullorum disease. The Branch issues hatchery, wholesale, first receiver and truck licences for the handling of poultry products.

The Veterinary Services Branch provides scientific diagnoses of livestock and poultry diseases through its laboratory; conducts investigations of disease conditions; lectures in veterinary science at the University of Alberta, Schools of Agriculture, and many meetings; and promotes government policies aimed at reducing losses throughout the province.

The Agricultural Extension Service operates 43 offices and employs the services of 56 district agriculturists and 21 district home economists. The district agriculturists assist farmers with their problems and advance departmental policies designed to improve the standard of agricultural practices. The district home economists provide a similar service for farm women. Bulletins are prepared dealing with agricultural and home economics topics. The Branch is responsible for the supervision of agricultural societies and, in co-operation with the federal Department of Labour, is concerned with recruitment and placement of farm labour.

The Fur Farms Branch administers the licensing and exporting of live animals and pelts, and assists fur farmers in care, management and stock improvement.

Schools of Agriculture and Home Economics are operated at Olds and Vermilion (see p. 455).

A Radio and Information Branch conducts five broadcasts a week over seven radio stations and issues weekly bulletins to press and radio.

The Water Resources Branch deals with water rights, drainage, irrigation, and water power development.

The Land and Forests Utilization Committee, composed of representatives from the Department of Lands and Forests, Power Commission, Department of Municipal Affairs, University of Alberta and Department of Agriculture, deals with the proper use of submarginal agricultural land.

Credit is made available to young farmers for the purchase of farm lands under the Farm Purchase Credit Act and the Farm Home Improvement Act.

British Columbia.—The Department of Agriculture has four main branches. The Administrative Branch is responsible for the general direction of agricultural policies, administration of legislation affecting agriculture and for the compilation of reports and publications. This Branch also maintains direct supervision of the Field Crops, Soil Survey, Plant Pathology, Entomology, Apiary, Markets and Statistics, Farmers' Institutes and Women's Institutes Branches.

The Livestock Branch engages in the promotion and supervision of the livestock industry and provides veterinary services affecting disease control regulations as well as supervising stock brands, inspection of dairy and fur farm premises, and inspection of beef grading. The Branch also supervises the operations of the Dairy Branch in the inspection of commercial dairy premises. Officials are stationed at 11 centres throughout the province.

The Horticulture Branch supervises fruit, vegetable and seed production, and provides advice on plant diseases and insect pest control. The Branch maintains field offices at 11 points in the southerly section of the province.

The Agricultural Development and Extension Branch offers general information services to farmers through 19 offices which cover all major farming districts. In addition, this Branch provides agricultural engineering service, supervision of the government land clearing program, farm labour services and promotion of junior club projects. The Poultry Section offers extension services to the poultry industry.

Subsection 2.—Agricultural Colleges and Schools

All provinces provide facilities or assistance for training in agricultural science at university level. The colleges and schools are administered by either the Department of Agriculture or the Department of Education of the respective province.

Newfoundland.—There are no agricultural colleges in the province, but the Agriculture Division of the Department of Mines and Resources provides a number of scholarships annually for young men to attend agricultural colleges in other provinces.

Prince Edward Island.—A two-year course in scientific agriculture offered at Prince of Wales College, Charlottetown, prepares students for third year at Macdonald College, Que. In the Vocational School, short courses provide knowledge and skill in agricultural pursuits and develop in the student a sense of the dignity and importance of agriculture as a calling and an understanding of the value of the industry to the province.

Nova Scotia.—The Nova Scotia Agricultural College at Truro offers two courses: the first two years of a degree course in agriculture; and a two-year course in vocational agriculture. The College assists in conducting short courses at various provincial centres, supports Folk Schools and gives direction to 4-H Club organizations. Tuition is free for Canadian students.

New Brunswick.—The four agricultural schools of New Brunswick are located at Woodstock, Fredericton, St. Joseph and St. Basile. Two-term agricultural courses extending over five months each year are offered at Fredericton, St. Joseph and St. Basile and a three-year course is conducted at Woodstock. The curriculum includes training in all phases of agriculture, shop and general academic work. Ten-month home economics courses are also offered at Woodstock and St. Joseph.

Quebec.—Four-year university courses leading to a degree of Bachelor of Science in Agriculture are available through Laval Faculty of Agriculture (Ste. Anne de la Pocatière), L'Institut Agricole d'Oka (affiliated with the University of Montreal), and McGill Faculty of Agriculture (Macdonald College). The Provincial Veterinary School at St. Hyacinthe (affiliated with the University of Montreal) offers a four-year course leading to a Doctorate in veterinary medicine. There are also 17 secondary agricultural schools throughout the province, and five orphanages offer courses in agriculture. More than 1,500 students, the great majority of whom are sons of farmers, attend these intermediate or regional schools of agriculture and 230 pupils follow practical agricultural courses in the orphanages. A farm is always annexed to the school for practical training and specialists give instruction on the maple-sugar industry, farm mechanics, co-operatives, plant protection, veterinary hygiene, aviculture, marketing and silviculture. School co-operatives and clubs are organized and directed by the pupils under supervision. Household science training for the daughters of farmers and settlers is given in nine of these schools.

Ontario.—A two-year course at the Ontario Agricultural College (for the Associate Diploma in Agriculture) provides basic training for young persons interested in making agriculture their vocation. Study includes the application of science to agricultural practice and training for rural citizenship. A four-year course at the same institution for the degree of Bachelor of Science in Agriculture gives fundamental education in the science of agriculture. Sound training is provided for farming as a profession, for entrance into all agricultural services, industry and teaching, and for those who wish to proceed to graduate studies for Master's and Doctorate degrees. Graduate courses are offered leading to the degree of Master of Science in Agriculture. Graduate students are enrolled in a department or departments of the Ontario Agricultural College conjointly with a department or departments of the University of Toronto for advanced courses of study and training in experimentation and scientific investigation. M.S.A. graduates may go into teaching, research, or postgraduate study.

Macdonald Institute offers two main courses in home economics for young women. The one-year course of practical training in the art and science of homemaking earns a diploma of merit but gives no professional standing. The four-year professional course leads to a Bachelor of Household Science degree granted by the University of Toronto. University matriculation standing (nine papers of grade 13) is necessary to enter the four-year course. At its completion, Food Administration Option graduates are eligible to work in the professional dietetic and food-service fields. These graduates and those of the Clothing and Textiles Option and the Home Management Option are finding increasing employment in many areas, notably in the education, extension, business and research fields.

The Ontario Veterinary College offers a five-year course leading to the degree of Doctor of Veterinary Medicine. In addition to its function as a teaching institution, the College is a research centre for animal diseases and provides free consultation for veterinary surgeons in practice as well as extension services in the interests of the live-stock industry.

The Kemptville Agricultural School offers: a diploma course in agriculture, comprised of two six-month terms, giving practical training in modern farming methods and community leadership, and designed primarily for young people who wish to farm but serving also as a preparation for many other occupations closely connected with agriculture; a six-month advanced course in agricultural mechanics for diploma graduates in agriculture; a six-month homemaker course leading to a diploma in homemaking and qualification for positions in fields of home economics; a diploma course comprised of two six-month terms for girls wishing to prepare for positions in the food services, sewing centres, tourist trade and other fields of home economics. In addition, a three-month course is given for dairy apprentices, leading to the Dairy School Diploma required for certified butter-makers, cheesemakers and operators of dairy manufacturing plants. A 450-acre farm and residence life are features of the Kemptville Agricultural School.

The Western Ontario Agricultural School at Ridgeway offers a two-year diploma course (October to April), which gives practical training in modern farming methods and prepares young men to serve agriculture in allied occupations. The facilities comprise a group of modern buildings, including a residence and dining hall, modern classrooms, laboratories, and athletic facilities. There is a 425-acre farm with up-to-date equipment, much of which is used for student activity and for practical demonstrations. A full complement of livestock is maintained on this farm for carrying out the school program.

Manitoba.—The Faculty of Agriculture and Home Economics of the University of Manitoba offers degree courses in agriculture and home economics as well as a two-year, sub-collegiate diploma course in agriculture. Practical short courses in agriculture and homemaking are also given at the Agricultural and Homemaking School at Brandon.

Saskatchewan.—The University of Saskatchewan offers a degree course in agriculture designed to meet the needs of those who intend to teach agriculture in secondary schools or colleges, to engage in research extension or administrative work, or to farm. Specialization is possible with permission of the faculty. Provision is made for combined courses in agriculture and arts or commerce. Postgraduate courses are available.

The Saskatchewan School of Agriculture offers a practical course intended to give sound training in farm practice and also to train young men in rural leadership.

All courses leading to a degree in home economics require four years. The prescribed course of studies for the first two years is the same for all pupils but in the third and fourth years four types are offered: (1) for teachers, (2) for dietitians, (3) general, and (4) additional specializations. A combined course leading to a degree in arts and science and in home economics requires at least five years.

Alberta.—The University of Alberta offers a four-year degree course in agriculture to students with senior matriculation or its equivalent. Students may elect a general program or major in a wide range of special courses in the fields of animal science, economics, entomology, dairying, plant science, and soils. Graduate work at the Master level is offered in all departments and at the Doctorate level in some.

The Alberta Schools of Agriculture and Home Economics, located at Olds and Vermilion, offer practical courses in agriculture and homemaking. The purpose of the schools is to train young men for farming and young women for homemaking. Students must have grade 9 standing for entrance into the regular two-term course. A one-year course is offered to those who have 70 or more high school credits. Living accommodation is provided as well as auditorium and gymnasium facilities.

During the summer months the schools are used for agricultural meetings and conferences of organizations that are connected with agriculture. During the month of July, leadership courses, 4-H Club gatherings, farm camps and other events keep the facilities in constant operation.

British Columbia.—The Faculty of Agriculture at the University of British Columbia offers a four-year general degree course in agriculture and a five-year honours course. In the honours course there are 15 fields in which a student may specialize. Work is also offered by the Faculty of Agriculture in the Faculty of Graduate Studies through which a student may proceed to the degrees of Master of Science in Agriculture and Master of Science; in a limited number of fields, work is offered at the Doctorate level. The Faculty also offers a one-year or two-year diploma course in occupational agriculture, adaptable to the needs of individual students.

In co-operation with various branches of the provincial Department of Agriculture and under the auspices of the University Extension Department, the Faculty of Agriculture also offers a number of short courses which vary in length from one or two days to several weeks.

Section 3.—Agricultural Irrigation and Land Conservation

Subsection 1.—Federal Projects*

Prairie Farm Rehabilitation Act

The PFRA program was instituted by Act of Parliament passed in 1935 to provide for rehabilitation of the drought and soil-drifting areas in the Provinces of Manitoba, Saskatchewan and Alberta. It was later continued in force and its scope enlarged. The Act is designed to promote better utilization of land and to develop surface water resources for stock-watering, domestic use and irrigation of crops.

The administration of the Act is carried out from headquarters at Regina and its programs include water development, community pasture development, rehabilitation and re-settlement of farmers from submarginal lands on irrigated lands, and large-scale irrigation and reclamation projects. Large irrigation and reclamation projects in Western Canada are carried out and financed jointly with the provinces concerned under agreements which set out the responsibilities of each party in the development work. Federal responsibility is administered by the PFRA.

Water Conservation Projects.—As a rehabilitation measure within the drought area of the three Prairie Provinces, PFRA provides engineering and financial assistance to farmers for the construction of water conservation works. The amount of financial assistance awarded is largely dependent upon the type and size of project constructed. Authority to proceed with construction is secured through the respective provincial water rights departments.

During 24 years of operation, PFRA has provided assistance to farmers for the construction of 60,184 individual farm dugouts and small dams, many of which are suitable for irrigation. In this way, adequate water storage facilities are being developed where water shortages exist, thereby extending widely the benefits of water throughout the dry areas of the prairies. By establishing a dependable water supply for domestic use, for stock-watering and for the production of feed and seed through irrigation, many prairie farmers have been rehabilitated without the necessity of moving to a new location.

The development of community water conservation projects is confined to the more well-defined watersheds. Where agricultural groups wish to utilize water on a community basis, PFRA may agree to finance the construction of the capital works provided the province or local organization involved assumes responsibility for the development and maintenance of the project after it has been completed. To Mar. 31, 1959, PFRA pro-

* Prepared under the direction of S. C. Barry, Deputy Minister of Agriculture, Ottawa.

vided the necessary assistance to construct over 400 community projects, the majority of which are located in the six watersheds originating in the three Prairie Provinces. These projects conserve surplus spring run-off water making it available for use during dry periods.

In addition, PFRA has established and continues to administer, five community irrigation projects in the drought area of southwestern Saskatchewan in accordance with the Government of Canada's rehabilitation and re-settlement policies. These projects are located at Val Marie, Eastend, Consul, Maple Creek and Swift Current and obtain their water supply from creeks originating in the Cypress Hills. The irrigable land on these projects is apportioned out in 40- to 60-acre plots to farmers in surrounding districts on the basis of need, for the production of assured livestock feed supplies.

Major Irrigation Projects.—*St. Mary Irrigation Project.*—To make available for irrigation a larger percentage of the water flowing through southern Alberta in the Waterton, Belly, St. Mary and Milk Rivers, a program to extend the original St. Mary Irrigation Project was undertaken by an agreement between the Government of Canada and the Province of Alberta. The Government of Canada agreed to construct the main supply reservoirs and the connecting canals, while the Province of Alberta undertook the responsibility for construction of the irrigation distribution system. When completed, this project will extend irrigation to approximately 510,000 acres of land in the area south of Lethbridge and east beyond Medicine Hat.

Construction of the St. Mary Dam, key structure on the whole project, was completed in 1951. During 1958 the second phase, involving the diversion of the Belly River into the St. Mary Reservoir, was completed. The third step, which is the diverting of the Waterton River into the St. Mary Reservoir by way of the Belly River diversion, is under construction. The present storage and distribution facilities extend irrigation to 296,000 acres of land in the St. Mary Project. With the addition of resources of the Waterton River, a further 214,000 acres of land will be brought under irrigation.

British Columbia Projects.—Irrigation development in British Columbia has been undertaken in connection with the Veterans' Land Act and at the request of the British Columbia Government. Intensive farming is practised in the Okanagan and South Thompson Valleys. The land developed for irrigation by PFRA is used mainly for the growing of small fruits and vegetables and for dairying.

Three irrigation projects in the South Thompson Valley area—the Johnstone Western Canada Ranching Irrigation Projects No. 1 and No. 2, and the Chase Irrigation Project with a total of 809 acres of land—have been developed for the benefit of about 40 veterans of World War II.

In the Okanagan Valley, the Penticton West Bench Project, completed in 1953 to irrigate 205 acres and accommodate 94 veterans, was extended in 1958 to provide an additional 69 small holdings for veterans. Three other irrigation projects have been completed in the Okanagan Valley for the settlement of war veterans—the Cawston Benches project east of the town of Keremeos, and the Westbank and Bankhead projects near Kelowna. Together they provide 1,782 acres of irrigated land for 170 veterans.

Major Reclamation Projects.—*North West Escarpment Reclamation Project.*—At the request of the Manitoba Government extensive investigations have been undertaken by PFRA in the Riding, Duck and Porcupine Mountain areas and Whitemud River watershed, where serious flood and erosion problems exist in an area containing over 252,000 acres of valuable agricultural land. The reclamation work, the cost of which is divided equally between the Government of Canada and the Province of Manitoba, consists of clearing and dyking stream channels, prevention of streambank erosion and aligning channels by building cutoffs and diversions.

Assiniboine River Project.—This project is being undertaken by PFRA at the request of the Manitoba Government to prevent flooding on the Assiniboine River, particularly between Brandon and Virden and between Portage la Prairie and Headingley, where thousands of acres of valuable agricultural land have been inundated repeatedly. A program of dyking and weir cutoffs has been carried out to protect the farm lands from flooding during periods of high river flow. Recently, extensive surveys have been undertaken in the headwaters of the Assiniboine River to locate possible damsites for effective stream flow regulation and flood control in the lower reaches of the Assiniboine River.

South Saskatchewan River Project.—In July 1958 agreement was reached between the Government of Canada and the Province of Saskatchewan to start construction on the South Saskatchewan River Project, a large-scale multi-purpose water conservation project proposed for development in south-central Saskatchewan. The purpose of the project is to make better use of the water resources of the river through irrigation, river control, power, urban water supply, and recreation. Control will be achieved by two dams, the major one on the South Saskatchewan River at a point approximately half-way between the towns of Outlook and Elbow and the other at the divide between the valleys of the South Saskatchewan and Qu'Appelle Rivers. The agreement provides that Canada and Saskatchewan will share the cost of building the dams and all other works associated with the creation of the reservoir; 75 p.c. will be borne by the Federal Government and 25 p.c. by Saskatchewan, the province's share to be not in excess of \$25,000,000. The contribution of the Government of Canada toward the cost of the project is in accord with its long-range resource development plan to provide for expansion and stability in the country's economy.

The project, when completed, will provide water for the irrigation of approximately 500,000 acres of land located in central Saskatchewan on both sides of the South Saskatchewan River between the town of Elbow and the city of Saskatoon and in the Qu'Appelle Valley extending east of Elbow to the Manitoba border. Power installations at the damsite will have a potential output of 475,000,000 kwh.

The reservoir, which will be 140 miles long and will store 8,000,000 acre-feet of water, will be constructed at an estimated cost of \$96,000,000. The main dam will be 210 feet high and of earth fill with an over-all length of 16,700 feet. It will be the largest rolled-earth dam ever built in Canada and one of the largest dams of its kind in the world. Construction was started in the autumn of 1958 and at Dec. 31, 1959 fifteen contracts totalling approximately \$16,000,000 had been let.

Bow River Irrigation Project.—The Bow River Project in Alberta was purchased by the Government of Canada in 1950 from the Canada Land and Irrigation Company, a private British interest. The land associated with this project is being developed for the rehabilitation and re-settlement of farmers from the drought and soil-drifting areas of the Prairie Provinces. Its development will ensure a water supply to 131,000 acres of land at present irrigated, and will make possible the irrigation of an additional 104,000 acres of provincial and privately owned land. The repairing and enlarging of old structures and the construction of new facilities to serve the total acreage is nearing completion.

Red Deer Irrigation Project.—The proposed Red Deer River development concerns the irrigation of an estimated 300,000 acres of land located in the east-central part of Alberta. The project will consist of a dam on the Red Deer River at Ardley and about 100 miles of main canal to two main reservoirs—Craig Lake and Hamilton Lake. The dam will contain power installations to produce power for pumping and also for sale commercially. Capacity is estimated at 20,000,000 kwh.

Saskatchewan River Reclamation Project.—Surveys and investigations were made by PFRA to determine the possibility of successfully reclaiming land for agriculture in the Pasquia area of the Saskatchewan River delta region near the town of The Pas in Manitoba. As a result an agreement was reached early in 1953 between the Government of Canada and the Province of Manitoba for the construction of the necessary reclamation

works to protect the area from flooding and to settle about 100,000 acres of arable land; the Government of Canada will assume the cost of building the main protective works, and Manitoba the costs of settlement, maintenance of works, and internal drainage. One-half of the reclaimed land is to be reserved for the re-settlement of farmers from drought areas and the remainder is to be sold. Part of the proceeds from the sale of the lands will go to the Federal Government as a partial reimbursement of the costs of building the main protective works. Construction began early in 1953 and will be completed in 1960. It is expected that the Manitoba Government will begin settlement of the 100,000 acres immediately.

Lillooet Valley Reclamation Project.—This project was undertaken upon agreement between the Government of Canada, the Government of British Columbia and the Pemberton Valley Reclamation District and is located in the Lillooet River Valley above and below the town of Pemberton. Its objective is to protect lands now under cultivation from flooding and to reclaim additional lands by dyking and drainage. The land so far reclaimed, amounting to 14,000 acres, allowed farmers in the district to increase their holdings and permitted the settlement of hundreds of additional inhabitants.

Land Utilization.—In addition to improved cultural methods and water conservation activities, rehabilitation of drought areas involves the conversion to grass production of large tracts of land that have proven unsuitable for cereal crop production. By agreement with the Provinces of Saskatchewan and Manitoba, these submarginal lands are leased to the Federal Government which agrees to finance the construction, maintenance and improvement of pasture facilities in these areas. The farmers located within the pasture areas are assisted in re-establishing themselves in new locations.

Since the inception of the land utilization program in 1937, a total of 1,815,265 acres of land has been developed into 64 separate community pastures. These pastures make it possible for the farmers in the surrounding area to stabilize their farm income through increased livestock production. During the year ended Mar. 31, 1959, grazing was provided for 117,032 head of livestock owned by 5,835 patrons.

An extensive improvement program in effect on all pastures is begun as soon as new areas are enclosed, a policy that has more than doubled the carrying capacity of this pasture land. The improvement policies most extensively practised in all pastures are the re-grassing of depleted areas, the development of sufficient stock-watering sites, and the following of proven pasture management policies such as controlled grazing and maintaining a 50-p.c. grass carryover where feasible. Since 1938, over 200,000 acres of land in community pastures have been re-grassed, and more than 1,300 stock-watering dams, dugouts, springs and wells have been constructed.

Maritime Marshland Rehabilitation Act Administration (MMRA)

Under the terms of this Act, Canada has undertaken to protect and rehabilitate the tidal marshlands in Nova Scotia, New Brunswick and Prince Edward Island in co-operation with the respective provincial governments. The principal function of MMRA is to carry out these responsibilities by constructing dykes, aboiteaux (tide control dams) and breakwaters to prevent tidal flooding of valuable agricultural lands. Headquarters of the MMRA organization is at Amherst, N.S.

The construction of large structures near the mouths of some rivers to hold back the tides has made it possible to eliminate the need for many miles of dykes and of numerous small aboiteaux. Such structures not only reclaim larger areas of land but very substantially reduce maintenance costs and provide roadways where bridges would otherwise have been required.

By Mar. 31, 1959, the provinces had asked to have over 150 marsh areas with a total area of 94,252 acres included in this reclamation program: Nova Scotia, 52,521 acres; New Brunswick, 41,456 acres; and Prince Edward Island, 275 acres.

As of March 1958, approximately 75,704 acres of marsh were protected from tidal flooding by structures which were either complete or in process of being built or rebuilt. The individual marsh areas form parts of approximately 3,300 farms having a total area of about 500,000 acres.

On the Annapolis River at the town of Annapolis Royal, N.S., and on the Tantramar River near the town of Sackville, N.B., work has been undertaken to dam these tidal rivers to protect large areas of marshlands. Both dams are designed to carry highway traffic, and will be completed in 1960. A similar structure, built on the Shepody River in New Brunswick, has been operating satisfactorily for two years.

Subsection 2.—Provincial Projects

Saskatchewan.*—The Conservation and Development Branch of the provincial Department of Agriculture was established in 1949. Its functions include the administration of water rights; irrigation development, engineering and structures; flood control and drainage; restoration of abandoned, under-utilized and misused lands; and construction of provincial community pastures. Conservation and development activity in the field of agricultural rehabilitation and reclamation is based on co-operation with the Federal Government's PFRA program with which a close working arrangement is maintained. Following is a summary of the activities of the Saskatchewan Department of Agriculture to Mar. 31, 1959.

Water Rights.—Under the Water Rights Act, 5,844 water storage projects for domestic irrigation, municipal, industrial and other like purposes have been licensed, and an additional 330 projects are in the development stage. There are 145 gauging stations being maintained by the federal Water Resources Branch under co-operative agreement to continue hydrometric surveys and a surface water inventory, and records are available for an additional 170 stations. The Chief Engineer of the Water Rights Office represents the Province of Saskatchewan on the Prairie Provinces Water Board.

Irrigation Development.—By the end of March, 1959, 125,708 acres of topographic surveys and 242 miles of profile surveys were completed on irrigation projects; 306 miles of ditch were built and 287 miles maintained; 1,452 structures were installed and 74 maintained; and 7,490 acres were levelled.

Flood Control Development.—Topographic surveys of 146,436 acres and 6,389 miles of profile surveys were completed on drainage projects; 656 miles of ditch and 225 miles of road were built and 157 miles of ditch maintained; 37 miles of dyke were built and 874 structures installed in drainage systems.

Development of Under-utilized and Misused Lands.—A total of 61,015 acres of tame perennial forage crops were seeded, mostly for fodder production; 991 miles of fence and 72 watering sites were built or rebuilt in departmental, municipal or co-operative pastures; 750,000 trees were planted; and 97 conservation and development areas totalling 12,000,000 acres were established.

Community Pastures.—Through the Lands Branch of the provincial Department of Agriculture, the province has transferred title to 1,194,574 acres and leased without charge another 341,876 acres of land to PFRA for community pastures. Outside the PFRA program, the province has another 797,454 acres in 110 community pastures operated by co-operative associations, by municipalities or by the provincial Department of Agriculture; in 1957, 18 pastures operated by the province provided grazing for 17,395 head of cattle owned by 959 local farmers.

Development of Land for Cultivation.—Crown lands, either under cultivation or suitable for cultivation, are leased for a 33-year period. The province may either reimburse farmers in cash for the cost of clearing and breaking virgin land or the farmers may retain crop shares equivalent in value to costs sustained. To Mar. 31, 1958, the investment of

* Revised by the Deputy Minister, Saskatchewan Department of Agriculture.

the province for land clearing and breaking amounted to \$6,528,652, and included work done in six settlement projects involving initial clearing and breaking on about 200 farm units before the land was leased.

Alberta.*—The Alberta Water Resources Act gives the Minister of the Department of Agriculture wide powers to investigate the water resources of the province and extensive surveys have been carried out to determine the distribution and extent of the available water supply in the province and the most beneficial use for irrigation, water power and other purposes. The Water Resources Branch of the provincial Department of Agriculture administers the licensing of water power projects and the construction work in several irrigation projects. Irrigation projects are also licensed and water allocated for domestic and irrigation purposes. Other work includes administration of drainage districts, co-operation on the Peace River Dug-out Project and on river protection projects where flooding occurs. In more recent years much of this work has been carried out by the Federal Government in co-operation with the Government of Alberta.

Stream measurement is being done by the Hydrometric Service of the federal Department of Northern Affairs and National Resources, and irrigation surveys are carried out largely by the water development organization under the PFRA (see p. 456).

In 1958 the Province of Alberta completed the construction of the distribution system for the Western Block of the Bow River Development; the irrigable area is approximately 45,000 acres.

The figures given in Table 5 of land actually irrigated in Alberta in 1958 are only approximate because, while there are increases resulting from the creation of new pump irrigated areas, there are also decreases caused by soil reclassification and less water use, depending on natural precipitation. Seepage and alkali problems also have an effect on acreage quoted as irrigable. Figures for small private irrigation projects have been omitted because of their uncertain water supply.

Gross cash returns from the irrigable area are estimated at \$30,000,000 though this figure does not take into account the value of stockwater supplied through irrigation works. Nor does it include many other credit items that are difficult to evaluate such as the recreational use of water which, to these one-time semi-arid areas, is particularly important, and the value of fish taken from irrigation reservoirs which is known to be quite significant. Several communities receive their entire domestic water supply via irrigation canals.

* Revised in the Deputy Minister's office, Alberta Department of Agriculture.

5.—Major Irrigation Districts in Alberta, 1958

District	Classified Irrigable Area	Area Actually Irrigated in 1958
	acres	acres
St. Mary and Milk Rivers Development.....	259,861	123,440
Magrath Irrigation District.....	7,885	7,000
Raymond Irrigation District.....	19,058	15,500
Taber Irrigation District.....	32,100	22,854
Western Irrigation District.....	50,000	9,870
Eastern Irrigation District.....	250,000	188,928
Bow River Development—		
Federal.....	94,783	58,995
Provincial.....	35,217	2,400
Mountain View Irrigation District.....	3,600	2,759
Leavitt Irrigation District.....	4,631	1,542
Aetna Irrigation District.....	8,303	—
United Irrigation District.....	34,005	11,032
Lethbridge Northern Irrigation District.....	96,125	51,916
Ross Creek Irrigation District.....	2,069	1,500
Macleod Irrigation District.....	3,000	—
Totals.....	900,647	495,736

British Columbia.*—About 20 p.c. of the arable land in British Columbia is under cultivation and nearly all the grazing area is being utilized. The 1,300,000 acres of improved land gives a ratio of approximately one acre per person. Within this arable area there exist an estimated 216,000 acres of irrigated land, and the total acreage of irrigable land in British Columbia is estimated at 400,000 acres. About three-quarters of the irrigated area is made up of individual projects and the other quarter is served by the larger irrigation projects listed in Table 6.

* Revised by the Comptroller of Water Rights, British Columbia Department of Lands and Forests.

6.—Major Irrigation Projects in British Columbia, April 1960

Project	Water Supply	Potential Irrigable Area	Irrigated Area	Water Service Charge on Grade A Land per Acre	Locality
		acres	acres	\$	
Provincial Irrigation System—					
Southern Okanagan Lands Project.....	Okanagan River.....	7,770	4,770	12.50	Okanagan Valley
Municipal Irrigation Systems—					
Pentiction Municipality....	Pentiction and Ellis Creeks..	2,331	2,132	24.00/20.00	"
Summerland Municipality..	Trout and Eneas Creeks....	3,443	3,398	13.52	"
Irrigation Districts—					
Balfour.....	Laird Creek.....	240	150	—	Kootenay Valley
Bankhead.....	Kelowna and Mission Creeks	85	85	22.50	Okanagan Valley
Barriere.....	Barriere River.....	181	129	4.50	North Thompson Valley
B.C. Fruitlands.....	Jameson and North Thompson Rivers.....	2,360	1,320	16.20	"
Black Mountain.....	Mission Creek and others....	4,284	3,686	15.00	Okanagan Valley
Black Sage.....	Okanagan River.....	169	169	17.00	"
Blueberry Creek.....	Blueberry Creek.....	133	66	15.00	Columbia Valley
Boundary Line.....	Osoyoos Lake.....	95	95	15.93	Okanagan Valley
Brent Davis.....	Mission Creek.....	480	405	5.00	"
Cawston.....	Similkameen River.....	650	400	14.00	Similkameen Valley
Chase.....	Chase Creek.....	639	639	3.50	South Thompson Valley
Covert.....	4th of July Creek.....	280	280	8.00	Kettle Valley
East Creston.....	Arrow Creek.....	1,540	1,357	5.00	Kootenay Valley
East Osoyoos.....	Osoyoos Lake.....	329	188	25.00	Okanagan Valley
Ellison.....	Kelowna Creek.....	760	662	6.95	"
Erickson.....	Sullivan Creek.....	105	105	5.00	Kootenay Valley
Fairview Heights.....	Similkameen River.....	630	630	27.00	Similkameen Valley
Glenmore.....	Kelowna Creek.....	2,700	1,940	13.00	Okanagan Valley
Grand Forks.....	Kettle River.....	2,500	2,328	6.00	Kettle Valley
Heffley.....	North Thompson River.....	1,653	1,653	1.98	North Thompson Valley
Kaleden.....	Marron River and Shatford Creek.....	544	544	18.00	Okanagan Valley
Keremeos.....	Ashnola River, etc.....	1,018	1,018	16.00	Similkameen Valley
Lakeview.....	Lambly (Bear) Creek.....	1,067	1,052	12.00	Okanagan Valley
Malcolm Horie.....	Joseph Creek.....	150	150	—	Kootenay Valley
Naramata.....	Naramata, Lequime Creeks,	1,025	970	22.20	Okanagan Valley
North Canyon.....	Camp Run (Association) Creek.....	390	339	1.50	Kootenay Valley
Okanagan Falls.....	Okanagan River.....	244	142	12.00 gravity 22.00 sprinkling	Okanagan Valley
Okanagan Mission.....	Bellevue Creek and Okanagan Lake.....	534	534	20.00	"
Osoyoos.....	Haynes Creek, etc.....	244	224	22.50	"
Oyama.....	Long Lake.....	362	362	22.00	"
Peachland.....	Peachland Creek.....	550	444	17.00	"
Renata.....	Dog Creek.....	150	122	12.00	Columbia Valley
Robson.....	Pass Creek.....	262	250	6.00	"
Scotty Creek.....	Scotty Creek.....	844	844	4.50	Okanagan Valley
Shuttleworth Creek.....	Shuttleworth Creek.....	282	109	8.00	"

6.—Major Irrigation Projects in British Columbia, April 1960—concluded

Project	Water Supply	Potential Irrigable Area	Irrigated Area	Water Service Charge on Grade A Land per Acre	Locality
		acres	acres	\$	
Irrigation Districts—concl.					
South East Kelowna.....	Hydraulic Creek.....	3,082	3,082	16.00	Okanagan Valley
South Vernon.....	Vernon Creek.....	319	207	5.00	"
Todd Hill.....	South Thompson River.....	146	118	15.00	South Thompson Valley
Trout Creek.....	Trout Creek.....	318	278	9.00	Okanagan Valley
Vermilion.....	Kindersley Creek.....	300	300	6.25	Columbia Valley
Vernon.....	Coldstream Creek, etc.....	8,067	6,668	5.00	Okanagan Valley
Vinsulla.....	Knouff Creek, etc.....	298	160	—	North Thompson Valley
Westbank.....	Powers Creek.....	1,008	798	15.30	Okanagan Valley
West Bench.....	Okanagan River.....	224	200	45.00	"
Wilmer.....	Wilmer Creek.....	241	109	5.00	Columbia Valley
Winfield and Okanagan Centre.....	Vernon Creek.....	1,896	1,855	12.00	Okanagan Valley
Wynndel.....	Duck Creek.....	502	502	4.00	Kootenay Valley
Irrigation Companies—					
Wood Lake Water Com- pany.....	Oyama Creek.....	832	832	7.50	Okanagan Valley

Section 4.—Statistics of Agriculture*

The collection, compilation and publication of statistics relating to agriculture is a responsibility of the Dominion Bureau of Statistics. Valuable information obtained through the Censuses of Canada and partial-coverage surveys may be obtained in reports issued by the Bureau.†

The Bureau also collects and publishes primary and secondary statistics of agriculture on an annual and monthly basis. The primary statistics relate mainly to the reporting of crop conditions, crop and livestock estimates, values of farm lands, wages of farm labour and prices received by farmers for their products. The secondary statistics relate to the marketing of grain and livestock, dairying, milling and sugar industries and cold storage holdings.

In the collection of annual and monthly statistics, the federal Department of Agriculture and the provincial Departments of Agriculture, as well as such agencies as the Board of Grain Commissioners and the Canadian Wheat Board, co-operate with the Bureau. Also, many thousands of farmers throughout Canada send in reports voluntarily.

The figures (except for 1956 Census data) contained in this Section do not include estimates for Newfoundland. Agriculture plays a relatively minor part in Newfoundland's economy, commercial production of most agricultural products being quite small.

A review of agricultural production and trade covering 1959 is given in Subsection 1; details for the year 1958 are presented in Subsections 2 to 9.

Subsection 1.—Review of Agricultural Production and Trade, 1959

During 1959 Canada made a further advance in the economic recovery and expansion that began in 1958. For the year as a whole, the gross national product averaged about 6 p.c. above the year 1958 and, with final product prices higher by about 2 p.c., it is estimated that the physical volume of output in 1959 was 4 p.c. above that of the preceding year. The physical volume of agricultural output, however, fell slightly in 1959 from

* Revised in the Agriculture Division, Dominion Bureau of Statistics.

† Copies obtainable from the Dominion Statistician or the Queen's Printer, Ottawa.

1958 to a level almost identical with the five-year average (1954-58). Production increases for such important items as grains, livestock and dairy products in 1959 over 1958 were not large enough to completely offset the decline estimated for most of the remaining agricultural products.

Farm cash income at \$2,786,000,000 for 1959 was slightly below the 1958 estimate of \$2,813,000,000. Farm operating and depreciation charges continued to move upward in 1959, accounted for by increases in outlays for each of the items considered in the expenditures. The slight decline in cash income coupled with the increase of 5 p.c. in farm expenditures and a continued decline in farm inventories of grain resulted in a drop in net farm income from \$1,353,000,000 for 1958 to \$1,192,000,000 for 1959. The 1959 net income estimate was, however, higher than the 1957 estimate of \$1,058,000,000.

Field Crops.—Canada's 1959 *wheat* crop amounted to 413,500,000 bu., compared with the 1958 crop of 371,700,000 bu. and the 1957 crop of 385,500,000 bu. Total supplies of wheat in the 1959-60 crop year (carryover at July 31 plus the 1959 crop) amounted to 962,500,000 bu. compared with 1,011,200,000 bu. the previous year. The 1959 *oat* crop of 417,900,000 bu. was 17,000,000 bu. larger than in the preceding year while production of *barley* at 225,600,000 bu. was below the 1958 level of 244,800,000 bu. Total supplies of oats and barley for the 1959-60 crop year amounted to 536,900,000 bu. and 353,700,000 bu. respectively. The combined fall and spring *rye* crop was estimated at 8,100,000 bu., giving total supplies for the 1959-60 crop year of 16,100,000 bu.

Owing to the combined effect of reduced carryover stocks of oats and rye and a smaller barley crop in 1959, total supplies of Canadian *feed grains* in the crop year 1959-60 were about 5 p.c. below those of 1958-59 despite higher levels of production for oats, rye and corn for grain. Current crop year supplies of oats, consisting of the Aug. 1 carryover of 119,300,000 bu. and the 1959 production of 417,900,000 bu., amounted to 537,200,000 bu., representing a decrease of 3 p.c. from the 1958-59 total of 555,900,000 bu. Supplies of barley at 352,700,000 bu. were 3 p.c. less than the 1958 total of 362,900,000 bu. and consisted of a carryover of 127,100,000 bu. and a crop of 225,600,000 bu.

Net supplies of feed grains available in 1959-60 at 16,600,000 tons were about 6 p.c. less than the 1958-59 total of 17,600,000 tons. Relative to livestock, the net supply of feed grain per grain-consuming animal unit was placed at 0.94 tons, the lowest level since 1954-55 and a decline of 9 p.c. from the 1958-59 level. This decline reflected the combined effect of decreased feed supplies and a 3-p.c. increase in grain-consuming animal units. The livestock population in Canada, estimated as at June 1, 1959, was the equivalent of 17,600,000 grain-consuming animal units compared with the June 1, 1958 level of 17,100,000.

Production of *sugar beets* in 1959 was estimated at 1,240,000 tons compared with the 1958 record outturn of 1,325,000 tons. Average yields per acre were a record high of 13.70 tons in 1959, slightly better than the 1958 yield of 13.54 tons. Alberta accounted for 38 p.c. of the total production and Ontario was the next largest producer. The national average farm price during 1958-59 was \$14.47 a ton.

The *dried pea* crop of 984,000 bu. in 1959 reflected the combined effect of reductions in both seeded acreage and yield. Imports amounted to 57,200 bu. and exports to 445,000 bu. in the 1958-59 crop year. Production of *dried beans* was 1,168,000 bu., Ontario being the chief grower. Exports in the 1958-59 crop year were 61,700 bu., down 39 p.c. from 1958, and imports were slightly lower at 138,500 bu.

The *soybean* crop of 6,800,000 bu. in 1959 was larger than the 1958 crop of 6,649,000 bu. In the 1958-59 crop year, 155,000,000 lb. of oil and 706,000,000 lb. of oil meal were produced in Canada. Imports of soybeans, mostly from the United States, amounted to 13,000,000 bu. and exports, mostly to the United Kingdom, were 2,000,000 bu. The national average farm price for the 1958-59 season was \$1.88 per bu.

The *flaxseed* crop at 21,200,000 bu. was about 7 p.c. below the 1958 production. Although acreage sown was down by 9 p.c., the average yield increased from 8.7 bu. per acre to 8.9 bu. Total supplies in the 1959-60 crop year were estimated at 27,800,000 bu.

Crushings in 1958-59 of 184,900,000 lb. of flaxseed yielded 64,400,000 lb. of linseed oil and 114,500,000 lb. of oil meal. Exports at 14,300,000 bu. were higher than in the previous year.

Livestock.—A very sharp increase of 27 p.c. in output of hogs was the most striking development in the livestock situation in 1959. Commercial marketings of hogs rose from 6,467,000 head in 1958 to 8,571,000 in 1959, closely approaching the record of 8,864,000 reached in 1944 when wartime production of hogs was at its peak in Canada. Output of cattle and calves dropped appreciably from 1958 when export demand from the United States was high. Exports of live cattle and calves dropped from 670,500 in 1958 to 342,700 in 1959.

Total meat output from slaughter in Canada at 2,611,000,000 lb. was 8.5 p.c. greater than in 1948 and per capita disappearance of the red meats increased 5.3 lb. to 143.3 lb., which was 9.5 lb. per capita more than the average annual disappearance in the period 1951-55. Exports of meat were almost 125,000,000 lb., equal to the 1951-55 average but 24,000,000 lb. less than in 1958.

Cattle numbers rose almost 4 p.c. from 10,112,000 head at Dec. 1, 1958 to 10,489,000 head, largely attributable to a continued build-up of beef cow numbers and a significantly larger inventory of calves. Numbers of sheep also rose 4 p.c. from Dec. 1, 1958 and hogs, after heavy marketings, declined 7 p.c. from year-earlier totals by Dec. 1, 1959. Price movements are reflected by the following annual average calculations of Toronto prices, 1958 prices in brackets: good steers, \$25.10 (\$22.90); good feeder steers, \$25.10 (\$23.50); good lambs, \$21.15 (\$22.35); and grade B hogs, \$23.80 (\$28.15).

Dairying.—Milk production in 1959 reached a new record at 18,192,000,000 lb., about 1 p.c. higher than the 1958 output. Increases in Prince Edward Island, Nova Scotia, Ontario and British Columbia more than offset, to that extent, decreases in the other provinces. Most of the increase in 1959 over 1958 was consumed as fluid milk and cream. The output of creamery butter was down by 3 p.c. to 325,300,000 lb. but factory cheese rose about 16 p.c. to 118,600,000 lb.

Annual per capita consumption of butter declined about 1 lb. for each of the years 1958 and 1959. As a result, despite lower production and exports that increased from 4,800 lb. to 10,504,000 lb., creamery butter stocks on hand at the end of 1959 amounted to 105,473,000 lb. and were 12.5 p.c. higher than at the end of 1958.

Concentrated whole milk production increased moderately in 1959. Output is normally slightly in excess of domestic requirements but increasing population and relatively stable per capita consumption and exports keep the supply in balance. Skim milk powder production declined almost 10,000,000 lb. from the high 1958 output of 185,600,000, but exports of 110,500,000 lb. and increased domestic disappearance largely liquidated surplus stocks on hand at the end of the year. Domestic disappearance of this product rose from 81,700,000 lb. in 1956 to 121,200,000 lb. in 1959.

Fruits and Vegetables.—All fruit crops except loganberries were smaller in 1959 than in 1958 when totals were influenced by higher-than-average crops in Ontario. Minimum prices for fruits for processing were at the same levels as in 1958 or higher. The apple crop, which is the most important of the fruit crops, was estimated at 14,500,000 bu., 15 p.c. below the 1958 output. Declines were recorded by all provinces except Nova Scotia and New Brunswick.

Commercial vegetable growers planted 204,000 acres in 1959 as compared with 202,000 acres in 1958.

Other Principal Farm Products.—The 1959 tobacco crop was estimated at 170,255,000 lb., green weight, compared with 197,302,000 lb. in 1958. Ontario flue-cured tobacco was calculated at 147,000,000 lb. as against 176,322,000 lb. in 1958. About 129,000 acres were planted to tobacco, 119,000 acres in southern Ontario which was 6,000 acres less than in the previous year. In 1959 the Ontario Flue-cured Tobacco

Growers' Marketing Board reduced the basic acreage allotment per farm by 15 p.c. after allowing a basic exemption per farm of 15 p.c. and allotting acreage to more than one hundred new farms. It is interesting to note that research has made possible the raising of tobacco in the Ottawa Valley of Ontario and in the Annapolis Valley of Nova Scotia; so far production in these areas is on a small scale.

The per capita cigarette consumption in Canada, calculated on the basis of total population, has increased considerably during the past few years, amounting to 1,678 in 1956, 1,817 in 1957, 1,901 in 1958, and 1,939 in 1959.

The *potato* crop, estimated at about 35,290,000 cwt. for 1959, recorded a decline of 12 p.c. from the 1958 crop of 40,301,000 cwt.

More *eggs* were marketed through registered stations in 1959 than in 1958. Heavier marketings occurred in all provinces except Alberta, Saskatchewan and Prince Edward Island. Reflecting this situation, egg prices were lower in all provinces than in the previous year. Egg price support to producers by means of deficiency payments under the Agricultural Stabilization Act began with the marketing year commencing Oct. 1, 1959.

Wool prices rose slightly from 1958 to 1959, but payment under the Agricultural Stabilization Act was lowered from 28 to 21 cents per lb. This resulted in a drop in the average farm value to 43.6 cents per lb. from 48.1 cents per lb. in 1958. Total farm value of shorn wool production decreased from \$3,053,000 to \$2,966,000. Production was estimated at 6,800,000 lb. as compared with 6,345,000 lb. in 1958.

The 1959 *maple* crop, expressed as syrup, was estimated at 2,358,000 gal., about 5 p.c. below that of 1958 and 8 p.c. below the average production for the years 1952-56. The bulk of the crop was produced in the Province of Quebec. Exports of sugar in 1959 stood at 7,400,000 lb., nearly 20 p.c. higher than in the previous year. The value of the 1958 maple crop was estimated at \$8,440,000, 18 p.c. less than in 1957 when production was larger than average.

The 1959 *honey* crop was estimated at 33,233,000 lb., 21 p.c. above that of 1958. The substantial increase in production resulted from much higher average yields—101 lb. per colony in 1959 compared to 83 lb. in 1958 and an average of 78 lb. for the years 1948 to 1957. Although there was a small increase in the number of active beekeepers from 13,150 in 1958 to 13,590 in 1959, colony numbers declined by 4,000 to a total of 328,700 in 1959.

Subsection 2.—Cash Income from the Sale of Farm Products, 1958*

Returns to farmers from the sale of farm products, together with participation payments from previous years' grain crops, were estimated at a near record high of \$2,800,000,000 for 1958. This estimate exceeded that of 1957 by 8 p.c. and was only slightly lower than the 1952 estimate of \$2,900,000,000, the highest recorded to date. Most of the increase in cash farm income in 1958 compared with 1957 may be attributed to larger returns from the sale of livestock and animal products; returns from the sale of field crops were about the same as in the previous year.

Each of the nine provinces contributed to the higher farm cash income in 1958. In Eastern Canada, receipts from field crops and livestock and animal products were responsible for the increase; in Western Canada the higher returns came from sales of livestock and animal products only. Total returns from the sale of field crops were lower than in 1957 for each of the three Prairie Provinces and for British Columbia, but these declines were offset by higher returns from field crops in Eastern Canada.

Field Crops.—Returns from the sale of wheat were estimated at \$427,000,000 for 1958, almost \$50,000,000 higher than a year earlier. Larger farm marketings to fill greater export demand was the principal factor affecting receipts in 1958; average farm prices were also higher, though this was attributed to quality since the initial payments to wheat

* Excludes Newfoundland.

growers for specific grades in 1958 were the same as those in 1957. Slightly higher returns from the sale of barley and rye were also the result of larger marketings since farm prices for these crops were practically the same in 1958 as in 1957.

The effects of the higher returns from wheat, rye and barley were offset by lower returns from flax, oats and Canadian Wheat Board participation payments. Reduced farm marketings in 1958 were responsible for the smaller returns from the sale of flax and oats compared with 1957.

In Eastern Canada the higher returns from field crops may be attributed mainly to potatoes, tobacco and sugar beets. Potato growers in Prince Edward Island and New Brunswick received about one-fifth more for their potato crops in 1958 than in 1957. In Ontario the higher returns accrued largely to tobacco and sugar beet growers.

Livestock and Animal Products.—Receipts from the sale of livestock and animal products were estimated at \$1,700,000,000, a record high amount 14 p.c. above the estimate for 1957. Receipts were higher in each of the nine provinces included in the national farm accounts, the increases being attributed mainly to larger returns from the sale of cattle and calves. For the country as a whole, cash farm income derived from the sale of cattle and calves was about one-quarter larger in 1958 than in 1957, a result of the combined effects of higher prices and larger marketings.

Hog growers throughout Canada received more cash from the sale of their product in 1958 than in 1957, larger marketings offsetting the effects of lower prices. Income from hog sales was estimated at \$325,000,000 in the later year, an amount 11 p.c. higher than the 1957 estimate and exceeded only in 1951 and 1952.

Sales of dairy products brought an estimated \$495,000,000 to farmers in 1958, almost 8 p.c. more than in 1957. This record amount in 1958 was attributable both to larger marketings and to a slight increase in average farm prices for milk as compared with 1957.

Supplementary Payments.—Following the 1957 drought in the Prairie Provinces, payments of over \$20,000,000 were made to prairie farmers under the Prairie Farm Assistance Act early in 1958. These payments were augmented to the extent of about \$40,000,000 under the Western Grain Producers Payment Regulations (Order in Council PC 1958/1442). (See p. 442.)

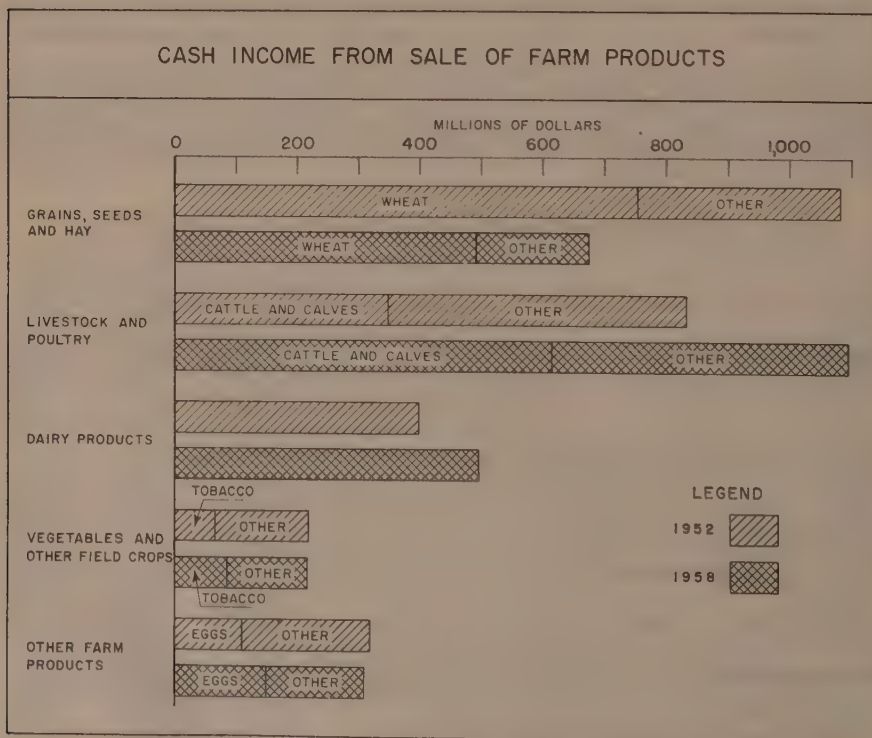
7.—Cash Income from the Sale of Farm Products, 1956-58

Item	1956 ^a	1957 ^a	1958
	\$'000	\$'000	\$'000
Grains, Seeds and Hay	807,055	690,196	674,475
Wheat.....	461,795	377,781	427,148
Wheat participation payments.....	61,987	79,314	64,258
Oats.....	50,535	37,865	27,162
Oats participation payments.....	8,170	—	—
Barley.....	98,841	76,648	78,080
Barley participation payments.....	15,217	—	7,570
Canadian Wheat Board net cash advance payments.....	—	24,990	-3,400
Rye.....	14,376	4,003	5,320
Flaxseed.....	61,932	58,364	36,093
Corn.....	22,003	22,370	22,175
Clover and grass seed.....	10,721	7,785	8,902
Hay and clover.....	1,478	1,076	1,167
Vegetable and Other Field Crops	177,548	199,885	216,363
Potatoes.....	43,395	37,985	42,012
Vegetables.....	57,627	68,918	71,232
Sugar beets.....	12,397	16,192	17,365
Tobacco.....	64,129	76,790	85,754
Livestock and Poultry	905,283	917,476	1,092,276
Cattle and calves.....	452,431	481,707	613,290
Sheep and lambs.....	9,776	10,111	10,832
Hogs.....	298,246	292,142	325,019
Poultry.....	144,830	138,516	143,135

7.—Cash Income from the Sale of Farm Products, 1956-58—concluded

Item	1956 ^a	1957 ^a	1958
	\$'000	\$'000	\$'000
Dairy Products	432,536	459,824	494,955
Fruits	37,743	39,960	41,448
Other Principal Farm Products	162,112	158,074	162,584
Eggs.....	148,877	143,200	148,960
Wool.....	2,096	2,267	2,892
Honey.....	4,413	5,606	5,025
Maple products.....	6,726	7,001	5,707
Miscellaneous Farm Products	49,583	48,661	52,839
Forest Products	54,816	46,140	37,388
Fur Farming	15,198	15,085	14,559
Totals, Cash Income from Farm Products	2,641,873	2,575,301	2,786,887
Supplementary payments ¹	5,004	1,987	60,128
Totals, Cash Income	2,646,877	2,577,288	2,847,015

¹ Includes payments made under the Prairie Farm Assistance Act and the Western Grain Producers Acreage Payment Regulations; other government subsidies are included in income from individual commodities.



8.—Cash Income from the Sale of Farm Products, by Province, 1956-58

Province	1956 ^r	1957 ^r	1958
	\$'000	\$'000	\$'000
Newfoundland.....	—	—	—
Prince Edward Island.....	26,447	24,447	27,891
Nova Scotia.....	43,546	41,979	42,288
New Brunswick.....	48,373	43,897	46,096
Quebec.....	385,296	385,932	414,495
Ontario.....	780,551	789,337	863,409
Manitoba.....	210,761	200,818	220,390
Saskatchewan.....	596,992	537,506	571,545
Alberta.....	436,653	437,895	481,535
British Columbia.....	113,254	113,490	119,238
Totals	2,641,873	2,575,301	2,786,887

Net Income of Farm Operators from Farming Operations, 1958.—Net income of Canadian farmers (exclusive of those in Newfoundland) was estimated at \$1,300,000,000 for 1958, a figure 20 p.c. higher than the 1957 estimate and approximately the same as the average for the five years 1953-57. With the exception of Nova Scotia and New Brunswick, provincial net income estimates were above 1957 levels, largely as a result of increased receipts from the sale of farm production. These larger cash receipts were, however, somewhat tempered by higher farm operating and depreciation charges and by a decline in year-end inventory values. Higher farm operating costs resulted from a combination of slightly higher prices and the use of more goods and services.

9.—Net Income of Farm Operators from Farming Operations, 1956-58

(Exclusive of Newfoundland)

NOTE.—Includes estimated value of farm homes, supplementary payments made under the provisions of the Prairie Farm Assistance Act and, in 1958, payments under the Western Grain Producers Acreage Payment Regulations.

Item	1956 ^r	1957 ^r	1958
	\$'000	\$'000	\$'000
1. Cash income from sale of farm products.....	2,641,873	2,575,301	2,786,887
2. Income in kind.....	328,312	327,326	339,073
3. Value of changes in inventory.....	220,042	—138,694	—107,003
4. Gross income (Items 1+2+3).....	3,190,227	2,763,933	3,018,957
5. Operating expenses.....	1,452,347	1,419,063	1,513,835
6. Depreciation charges.....	284,749	285,349	287,688
7. Total operating expenses and depreciation (Items 5+6).....	1,737,096	1,704,412	1,801,523
8. Net income excluding supplementary payments (Items 4-7).....	1,453,131	1,059,521	1,217,434
9. Supplementary payments.....	5,004	1,987	60,128
Net Income of Farm Operators from Farming Operations (Items 8+9).....	1,458,135	1,061,508	1,277,562

10.—Net Income of Farm Operators from Farming Operations, by Province, 1956-58

NOTE.—Net income includes estimated rental value of farm homes, supplementary payments made under the provisions of the Prairie Farm Assistance Act and, in 1958, payments under the Western Grain Producers Acreage Payment Regulations.

Province	1956 ^r	1957 ^r	1958
	\$'000	\$'000	\$'000
Newfoundland.....	—	—	—
Prince Edward Island.....	13,095	9,488	12,001
Nova Scotia.....	17,683	15,937	15,112
New Brunswick.....	26,322	20,179	19,091
Quebec.....	193,630	188,310	201,661
Ontario.....	313,026	330,223	381,043
Manitoba.....	130,282	75,540	121,166
Saskatchewan.....	438,808	184,446	224,061
Alberta.....	274,568	185,466	249,722
British Columbia.....	50,721	51,919	53,705
Totals	1,458,135	1,061,508	1,277,562

Subsection 3.—Volume of Agricultural Production

The index of physical volume of agricultural production for Canada (exclusive of Newfoundland) was estimated at 139.4 (1935-39=100) for 1958, which was 4.3 p.c. above the estimate of 133.6 for 1957 but 17.8 p.c. below the all-time high of 169.5 established in 1956. Most of the commodities considered in the index, particularly livestock, contributed to the increase between 1957 and 1958, but the substantial reduction in these two years compared with 1956 was almost entirely accounted for by a significantly smaller production of grain.

Provincially, gains in agricultural production were recorded for all provinces except the Maritimes and Saskatchewan in 1958 over 1957. The increases ranged from just under 2 p.c. in British Columbia to approximately 15 p.c. in Manitoba; reductions in the Maritimes and Saskatchewan were between 6 and 7 p.c.

11.—Index Numbers of Physical Volume of Agricultural Production, by Province, 1949-58

(1935-39=100. Exclusive of Newfoundland)

NOTE.—For a description of this index, methods and coverage, see DBS *Quarterly Bulletin of Agricultural Statistics* for April-June, 1952. Figures for 1935-44 are given in the 1950 Year Book, p. 420, and for 1945-48 in the 1956 edition, p. 423.

Year	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
1949	158.8	105.1	145.8	126.4	124.9	125.7	128.1	98.1	148.7	122.3
1950	148.2	105.2	140.2	136.3	128.1	137.8	168.3	121.8	134.2	137.8
1951	119.5	87.7	110.4	139.0	128.6	146.4	218.1	157.1	126.9	154.7
1952	142.3	80.6	109.4	124.7	119.6	164.6	267.4	174.8	133.3	166.2
1953	142.8	80.6	121.6	132.9	129.5	131.3	237.5	158.6	136.3	157.9
1954	150.3	88.7	114.1	129.8	129.1	102.1	108.8	119.4	131.4	119.7
1955	150.0	93.3	135.9	143.8	129.6	127.3	210.8	141.2	131.2	150.4
1956	139.6	94.5	127.5	138.4	137.5	171.5	251.4	168.7	127.8	169.5
1957	161.8	93.7	126.7	134.0	141.5	125.3	140.7	118.2	145.9	133.6
1958	150.8	87.8	118.0	139.2	157.2	144.7	131.7	124.4	148.2	139.4

Subsection 4.—Field Crops

Crop conditions across Canada were variable in 1958. In the Prairie Provinces, where drought was experienced for the second consecutive year, crops turned out exceptionally well. Hail losses were light and losses from rust were negligible but insect outbreaks required extensive control measures. Dry weather also prevailed in parts of British Columbia while in the Maritimes and Quebec the weather ranged from normal to too much moisture and cool weather in some areas. Although the growing season was dry over the main producing areas of Ontario, cool weather and timely rains, coupled with new high-yielding varieties of many crops, pushed yields of most small grains to record levels. Canadian production of field crops in 1958, on the average, did not differ greatly from that of the previous year. New production records were established for soybeans and sugar beets.

Marketings of the five major grains (wheat, oats, barley, rye and flaxseed) in the Prairie Provinces totalled 576,021,000 bu. in 1957-58 and 551,977,446 bu. in the 1958-59 crop year. These amounts were well below the record 1952-53 year when marketings reached 844,855,000 bu. but compared favourably with the ten-year (1947-48 to 1956-57) average of 578,380,000 bu. Combined exports of the same grains (including wheat flour, rolled oats and oatmeal, malt, and pot and pearl barley) amounted to 445,870,000 bu. in 1957-58 and 390,000,000 bu. in 1958-59. Exports during the period were above the ten-year average of 382,225,000 bu.

After registering a decrease in 1957-58, supplies of the five principal grains declined again in 1958-59, with reduced carryover more than offsetting a relatively small increase in total production. Reflecting the combined effect of smaller available supplies and expanded disappearance, total carryover stocks at July 31, 1959 were drawn down from the 1958 level.

The gross value of production of principal field crops on Canadian farms in 1957, based on average prices received by farmers throughout the 1957-58 crop year, was estimated at \$1,473,203,000. On the basis of partial price returns and reflecting reduced crop production, the 1958 value decreased slightly to \$1,460,983,000. These amounts were well below the record-breaking year of 1952 when the total reached \$2,306,397,000, and the 1951 total of \$2,120,301,000. Estimates of the value of the 1958 crops, based on average prices received by farmers during the complete crop year, will be published in one of the regularly scheduled DBS crop reports and in the *Quarterly Bulletin of Agricultural Statistics* (Catalogue No. 21-003).

12.—Acreages, Yields and Prices of Principal Field Crops 1953-58, with Five-Year Average 1945-49

(Exclusive of Newfoundland)

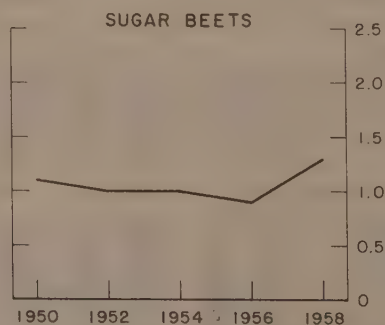
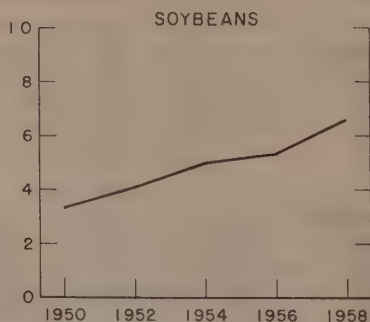
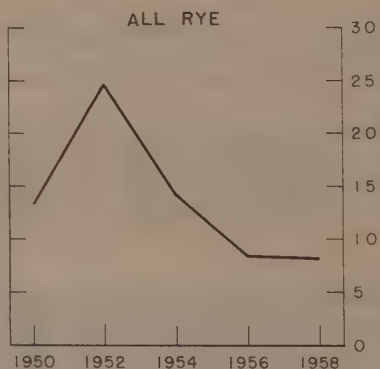
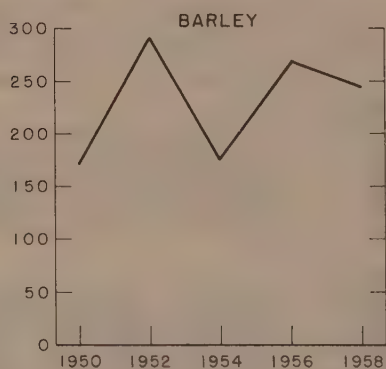
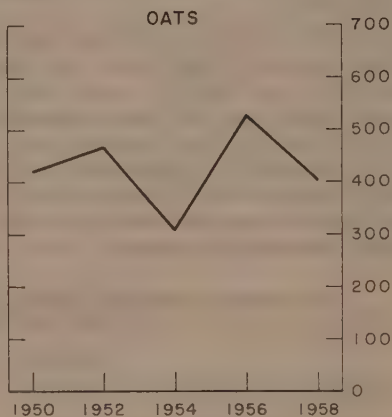
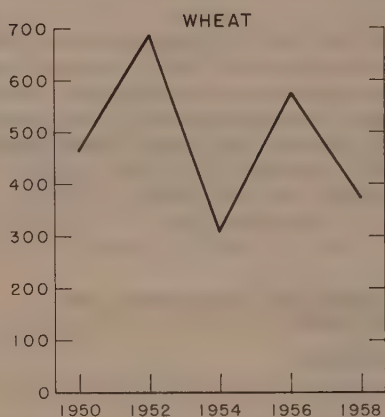
NOTE.—Some of the figures in this table have been revised since the publication of the 1959 Year Book.

Crop and Year	Area	Yield per Acre	Pro-duction	Average Price	Total Value ¹	Crop and Year	Area	Yield per Acre	Pro-duction	Average Price	Total Value ¹
	'000 acres	bu.	'000 bu.	\$ per bu.	\$'000		'000 acres	bu.	'000 bu.	\$ per bu.	\$'000
Wheat—						Mixed Grains—					
Av. 1945-49...	24,558	14.8	362,774	1.62	587,412	Av. 1945-49...	1,226	35.9	44,046	0.84	36,988
1953.....	26,384	24.0	634,040	1.33	844,503	1953.....	1,550	43.7	67,738	0.85	57,267
1954.....	25,539	13.0	331,981	1.24	411,781	1954.....	1,670	38.1	63,649	0.84	53,216
1955.....	22,660	22.9	519,178	1.37	709,461	1955.....	1,701	39.0	66,266	0.84	55,726
1956.....	22,781	25.2	573,040	1.25	714,053	1956.....	1,560	42.7	66,618	0.84	56,008
1957.....	21,117	18.3	385,508	1.28	493,491	1957.....	1,452	43.6	63,292	0.75	47,693
1958.....	20,899	17.8	371,730	1.14	424,781	1958.....	1,422	45.5	64,648	0.81	52,093
Oats—						Flaxseed—					
Av. 1945-49...	11,513	28.4	326,437	0.87	219,370	Av. 1945-49...	1,164	8.2	9,502	3.91	37,188
1953.....	9,573	41.9	413,971	0.63	259,616	1953.....	956	10.2	9,748	2.44	23,808
1954.....	10,052	30.5	306,401	0.67	206,537	1954.....	1,178	9.3	10,998	2.54	27,983
1955.....	10,958	36.5	399,451	0.67	265,749	1955.....	1,836	10.3	18,990	2.77	52,669
1956.....	11,707	44.8	524,517	0.57	300,234	1956.....	3,041	11.5	34,991	2.56	89,631
1957.....	11,017	34.5	380,599	0.60	226,858	1957.....	3,486	5.5	19,179	2.53	48,549
1958.....	11,039	36.3	400,951	0.57	229,913	1958.....	2,623	8.7	22,766	2.60	59,158
Barley—						Potatoes—		cwt.	'000 cwt.	\$ per cwt.	
Av. 1945-49...	6,569	21.5	141,171	0.95	133,431	Av. 1945-49...	417	95.3	39,704	1.83	72,522
1953.....	8,908	29.4	262,121	0.86	224,681	1953.....	324	129.2	41,803	1.32	55,004
1954.....	7,842	22.3	175,196	0.89	155,278	1954.....	304	105.7	32,163	2.42	77,951
1955.....	9,887	25.4	251,102	0.87	219,143	1955.....	313	128.3	40,191	1.77	71,332
1956.....	8,390	32.1	269,065	0.79	211,336	1956.....	312	135.4	42,325	1.75	74,274
1957.....	9,403	23.0	215,993	0.76	165,030	1957.....	312	141.2	44,077	1.73	76,302
1958.....	9,548	25.6	244,764	0.72	176,346	1958.....	311	129.6	40,301	1.50	60,451
Rye—						Tame Hay—		ton	'000 tons	\$ per ton	
Av. 1945-49...	1,192	11.1	13,182	1.85	24,362	Av. 1945-49...	10,535	1.59	16,729	14.99	250,847
1953.....	1,505	19.2	28,845	0.82	23,609	1953.....	10,564	1.89	20,015	13.75	275,211
1954.....	787	16.3	12,812	0.92	11,734	1954.....	10,737	1.87	20,118	13.98	281,156
1955.....	746	18.6	13,840	0.92	12,775	1955.....	10,842	1.86	20,186	15.05	303,837
1956.....	547	15.4	8,434	1.00	8,421	1956.....	10,922	1.80	19,655	15.40	302,098
1957.....	551	15.5	8,539	0.88	7,537	1957.....	11,452	1.68	19,188	15.38	295,177
1958.....	521	15.3	8,002	0.89	7,106	1958.....	11,477	1.57	18,029	15.63	281,787

¹Gross value of farm production; does not represent cash income from sales.

PRODUCTION OF PRINCIPAL FIELD CROPS

MILLIONS OF BUSHELS



13.—Acreages, Production and Values of Principal Field Crops, by Province, 1957 and 1958, with Five-Year Average 1945-49

(Exclusive of Newfoundland)

Field Crop and Province	Area			Total Production			Gross Farm Value		
	Average 1945-49	1957	1958	Average 1945-49	1957	1958	Average 1945-49	1957	1958
	'000 ac.	'000 ac.	'000 ac.	'000 bu.	'000 bu.	'000 bu.	\$'000	\$'000	\$'000
Wheat	21,558	21,117	20,899	362,774	385,508	371,730	587,412	493,491	424,781
Prince Edward Island...	2	3	3	54	78	92	84	126	147
Nova Scotia.....	1	1	1	23	17	20	34	27	32
New Brunswick.....	2	2	2	46	68	64	77	112	108
Quebec.....	12	15	13	206	393	295	313	621	472
Ontario—									
Winter.....	621	500	580	18,100	19,588	23,896	28,358	25,464	31,543
Spring.....	40	15	15	810	333	363	1,287	433	479
Manitoba.....	2,420	2,200	2,358	48,000	49,000	58,000	79,827	64,680	67,280
Saskatchewan.....	14,438	13,365	13,182	185,000	222,000	192,000	301,085	286,380	216,960
Alberta.....	6,915	4,881	4,704	108,000	93,000	96,000	171,983	114,390	106,560
British Columbia.....	106	45	41	2,615	1,031	1,000	4,365	1,258	1,200
Oats	11,513	11,017	11,039	326,437	380,599	400,951	219,370	226,858	229,913
Prince Edward Island...	110	93	97	4,073	4,185	4,559	3,113	3,139	2,872
Nova Scotia.....	64	40	42	2,221	1,975	1,974	1,891	1,778	1,757
New Brunswick.....	178	121	122	6,136	5,808	5,368	4,799	4,240	4,026
Quebec.....	1,377	1,258	1,307	32,991	50,320	45,745	26,716	41,262	37,968
Ontario.....	1,503	1,610	1,799	56,700	79,695	99,305	42,078	55,786	68,520
Manitoba.....	1,460	1,800	1,711	49,000	58,000	60,000	31,402	30,160	28,800
Saskatchewan.....	4,084	3,214	3,064	96,000	80,000	83,000	60,134	40,000	38,180
Alberta.....	2,645	2,791	2,809	75,000	96,000	97,000	46,148	48,000	45,500
British Columbia.....	93	90	88	4,535	4,616	4,000	3,088	2,493	2,200
Barley	6,569	9,403	9,548	141,171	215,993	244,764	133,431	165,030	176,346
Prince Edward Island...	6	1	1	169	38	30	172	37	30
Nova Scotia.....	6	1	2	153	49	53	172	52	57
New Brunswick.....	11	4	4	312	156	159	346	159	170
Quebec.....	84	25	23	1,860	911	727	2,006	984	800
Ontario.....	234	97	91	7,477	3,783	4,095	7,148	3,707	3,972
Manitoba.....	1,766	1,704	1,584	42,000	33,000	44,000	40,907	26,730	33,440
Saskatchewan.....	2,354	3,791	3,939	43,000	80,000	87,000	39,813	60,800	61,770
Alberta.....	2,088	3,714	3,846	45,000	96,000	107,000	42,121	71,040	74,900
British Columbia.....	21	66	58	731	2,056	1,700	746	1,521	1,207
Fall Rye	863	440	410	9,882	7,299	6,792	13,272	6,508	6,096
Quebec.....	4	8	10	59	208	217	77	250	256
Ontario.....	86	85	92	1,771	1,980	2,355	2,900	2,000	2,331
Manitoba.....	40	66	65	671	1,100	1,120	1,140	968	952
Saskatchewan.....	531	184	161	4,323	2,300	1,600	8,394	1,909	1,344
Alberta.....	201	94	81	3,029	1,660	1,470	5,710	1,345	1,191
British Columbia.....	2	2	1	29	51	30	50	36	22
Spring Rye	329	111	112	3,299	1,240	1,210	6,090	1,029	1,010
Manitoba.....	10	7	6	142	100	80	255	88	68
Saskatchewan.....	192	84	87	1,917	900	900	3,522	747	756
Alberta.....	127	20	18	1,240	240	230	2,514	194	186
All Rye	1,192	551	521	13,182	8,539	8,002	24,362	7,537	7,106
Quebec.....	4	8	10	59	208	217	77	250	256
Ontario.....	86	85	92	1,771	1,980	2,355	2,900	2,000	2,331
Manitoba.....	50	73	72	813	1,200	1,200	1,395	1,056	1,020
Saskatchewan.....	723	268	248	6,240	3,200	2,500	11,916	2,656	2,100
Alberta.....	328	114	100	4,269	1,900	1,700	8,024	1,539	1,377
British Columbia.....	2	2	1	29	51	30	50	36	22
Peas	83	85	72	1,375	1,400	1,146	3,811	2,861	2,519
Quebec.....	7	4	3	91	72	51	339	274	191
Ontario.....	26	7	7	468	143	133	1,337	313	302
Manitoba.....	21	56	50	366	840	700	916	1,260	1,400
Saskatchewan.....	7	3	3	109	45	41	294	124	111
Alberta.....	16	8	4	215	166	93	598	448	279
British Columbia.....	6	6	5	126	134	128	326	442	236
Beans	82	62	67	1,356	1,091	1,421	5,024	3,735	5,411
Quebec.....	2	2	2	30	26	26	124	104	110
Ontario.....	80	61	66	1,326	1,068	1,395	4,900	3,631	5,301
Soybeans	73	256	263	1,492	6,508	6,649	3,492	12,695	12,231
Ontario.....	73	252	256	1,492	6,476	6,579	3,492	12,628	12,105
Manitoba.....	—	4	7	—	32	70	—	67	126

13.—Acreages, Production and Values of Principal Field Crops, by Province, 1957 and 1958, with Five-Year Average 1945-49—continued

Field Crop and Province	Area			Total Production			Gross Farm Value		
	Average 1945-49	1957	1958	Average 1945-49	1957	1958	Average 1945-49	1957	1958
	'000 ac.	'000 ac.	'000 ac.	'000 bu.	'000 bu.	'000 bu.	\$'000	\$'000	\$'000
Buckwheat	179	107	102	3,642	2,202	2,139	3,896	2,351	2,266
New Brunswick.....	11	4	4	267	148	137	325	163	133
Quebec.....	56	38	36	1,116	948	896	1,279	1,157	1,075
Ontario.....	109	30	27	2,212	651	626	2,229	690	607
Manitoba.....	3	35	35	48	455	480	62	341	451
Mixed Grains	1,226	1,452	1,422	44,046	63,292	64,648	36,988	47,693	52,093
Prince Edward Island..	48	52	50	1,878	2,444	2,450	1,590	2,126	1,764
Nova Scotia.....	4	10	10	139	485	464	135	480	441
New Brunswick.....	3	6	5	97	290	228	79	252	214
Quebec.....	189	190	181	4,921	7,790	6,480	4,852	7,946	6,869
Ontario.....	916	840	760	35,438	42,420	42,256	29,194	30,967	34,227
Manitoba.....	18	72	111	496	2,000	3,400	364	1,220	2,210
Saskatchewan.....	13	63	75	255	1,379	1,800	192	910	1,260
Alberta.....	33	215	225	736	6,300	7,400	512	3,654	4,958
British Columbia.....	2	4	4	86	184	170	70	138	150
Flaxseed	1,164	3,486	2,623	9,502	19,179	22,766	37,188	48,549	59,158
Ontario.....	39	12	11	463	163	156	1,879	414	407
Manitoba.....	449	865	550	4,267	3,500	4,700	16,732	8,680	12,126
Saskatchewan.....	526	2,025	1,496	3,380	10,500	11,300	12,872	26,670	29,380
Alberta.....	146	572	556	1,373	4,900	6,500	5,555	12,495	16,965
British Columbia.....	4	12	10	39	116	110	149	290	280
				'000 lb.	'000 lb.	'000 lb.			
Sunflower Seed	29	30	49	16,312	12,000	22,125	952	540	1,107
Manitoba.....	29	30	45	16,312	12,000	19,350	952	540	968
Alberta.....	—	—	4	—	—	2,775	—	—	139
Rapeseed	40	618	626	29,663	433,058	388,100	1,746	13,720	9,377
Manitoba.....	—	28	21	—	17,188	12,600	—	516	365
Saskatchewan.....	40	520	535	29,663	364,000	330,000	1,746	11,648	7,920
Alberta.....	—	70	70	—	51,870	45,500	—	1,556	1,092
				'000 bu.	'000 bu.	'000 bu.			
Shelled Corn	244	514	498	11,038	29,613	29,892	14,056	34,950	35,233
Ontario.....	231	503	487	10,734	29,325	29,610	13,726	34,604	34,940
Manitoba.....	13	12	12	304	288	282	330	346	293
				'000 cwt.	'000 cwt.	'000 cwt.			
Potatoes	417	312	311	39,704	44,077	40,301	72,522	76,302	60,451
Prince Edward Island..	46	46	46	5,993	9,028	8,120	7,746	11,736	8,851
Nova Scotia.....	16	10	10	1,767	1,754	1,339	3,436	3,210	2,075
New Brunswick.....	61	46	46	8,730	9,200	8,050	13,241	11,960	7,648
Quebec.....	118	98	91	8,956	11,552	9,377	17,485	21,602	15,941
Ontario.....	92	55	56	8,004	7,280	7,967	16,877	12,342	14,580
Manitoba.....	21	15	16	1,405	1,055	1,200	2,371	2,986	1,800
Saskatchewan.....	24	14	15	1,230	754	770	2,570	2,262	1,794
Alberta.....	23	17	19	1,679	1,400	1,580	3,706	3,878	3,302
British Columbia.....	16	10	12	1,940	2,074	1,898	5,089	6,326	4,460
				'000 tons	'000 tons	'000 tons			
Field Roots	73	33	35	725	355	401	12,845	8,243	7,387
Prince Edward Island..	8	6	6	119	80	81	1,906	1,440	1,523
Nova Scotia.....	6	3	3	72	46	51	1,732	1,472	918
New Brunswick.....	7	3	2	66	31	30	1,086	930	555
Quebec.....	14	8	8	114	63	63	2,712	1,701	1,575
Ontario.....	36	13	15	343	135	176	5,409	2,700	2,816

¹ Includes British Columbia.

13.—Acreages, Production and Values of Principal Field Crops, by Province, 1957 and 1958, with Five-Year Average 1945-49—concluded

Field Crop and Province	Area			Total Production			Gross Farm Value		
	Average 1945-49	1957	1958	Average 1945-49	1957	1958	Average 1945-49	1957	1958
	'000 ac.	'000 ac.	'000 ac.	'000 tons	'000 tons	'000 tons	\$'000	\$'000	\$'000
Tame Hay	10,535	11,452	11,477	16,729	19,188	18,029	250,847	295,177	281,787
Prince Edward Island..	221	210	212	333	273	403	4,620	4,368	5,038
Nova Scotia.....	403	314	311	699	502	684	11,773	10,542	10,260
New Brunswick.....	534	392	378	748	706	680	11,849	11,296	8,160
Quebec.....	3,959	3,497	3,464	5,525	5,770	5,716	87,681	95,205	91,456
Ontario.....	3,371	3,350	3,185	6,128	6,600	5,542	86,292	94,050	84,516
Manitoba.....	324	722	776	556	1,275	1,000	6,021	12,750	13,500
Saskatchewan.....	481	723	788	681	800	770	9,029	11,200	11,935
Alberta.....	940	1,887	1,996	1,370	2,370	2,500	19,053	36,142	41,875
British Columbia.....	302	357	367	688	892	734	14,530	19,624	15,047
Fodder Corn	404	371	381	3,509	3,612	3,767	17,951	17,058	17,678
Quebec.....	71	68	68	605	652	558	4,172	3,912	3,208
Ontario.....	308	280	285	2,790	2,831	3,061	12,910	12,371	13,315
Manitoba.....	16	18	24	58	90	110	422	540	825
Saskatchewan.....	5	2	2	14	5	4	137	65	58
British Columbia.....	4	3	2	42	34	34	309	170	272
Sugar Beets	66	84	98	690	1,054	1,325	9,080	13,948	15,325
Quebec.....	3	6	6	27	76	65	344	1,070	844
Ontario.....	22	20	32	219	265	463	2,950	3,614	5,725
Manitoba.....	11	21	22	90	219	196	1,113	2,743	2,744
Alberta.....	30	37	38	354	493	601	4,672	6,521	6,012

14.—Acreages and Production of Grain in the Prairie Provinces, 1952-58

Grain	1952	1953	1954	1955	1956	1957	1958
ACREAGES							
	'000 acres	'000 acres	'000 acres	'000 acres	'000 acres	'000 acres	'000 acres
Wheat.....	25,372	25,517	24,707	21,964	22,064	20,446 ^a	20,244
Oats.....	7,560	6,490	6,715	7,788	8,658	7,805	7,584
Barley.....	8,145	8,599	7,568	9,638	8,181	9,209	9,369
Rye.....	1,153	1,421	687	665	452	455	419
Flaxseed.....	1,027	908	1,148	1,809	3,010	3,462	2,602
PRODUCTION							
	'000 bu.	'000 bu.	'000 bu.	'000 bu.	'000 bu.	'000 bu.	'000 bu.
Wheat.....	678,000	604,000	305,000	497,000	551,000	364,000 ^a	346,000
Oats.....	346,000	276,000	196,000	290,000	400,000	234,000	240,000
Barley.....	281,000	251,000	167,000	244,000	262,000	209,000	238,000
Rye.....	22,320	26,900	10,790	12,300	6,350	6,300	5,400
Flaxseed.....	10,700	9,100	10,700	18,700	34,600	18,900	22,500

Stocks of Grain in Canada.—Table 15 shows the stocks of Canadian grain on hand in Canada and in the United States on July 31 for the years 1953-58, with averages for the five-year periods 1940-44 and 1945-49. Stocks in Canada are separated into

those in commercial positions and those on farms. Stocks on farms and in country elevators in the Prairie Provinces are given separately.

15.—Carryover of Canadian Grain as at July 31, 1953-58, with Five-Year Averages 1940-44 and 1945-49

NOTE.—Figures for individual years before 1953 will be found in the corresponding table of previous editions of the Year Book. Some of the figures in this table have been revised since the publication of the 1959 edition.

As at July 31—	Total in Canada and United States	Total in Canada	In Commercial Storage in Canada	On Farms in Canada	Prairie Provinces	
					On Farms	In Country Elevators
	bu.	bu.	bu.	bu.	bu.	bu.
Wheat—						
Av. 1940-44.....	431,102,442	408,734,141	351,581,341	57,152,800	54,960,000	154,370,863
Av. 1945-49.....	119,587,196	115,603,876	82,718,676	32,885,200	31,265,600	24,698,778
1953.....	383,185,486	382,545,625	288,829,625	93,716,000	91,000,000	154,702,768
1954.....	618,675,202	618,567,923	386,707,923	231,860,000	228,000,000	211,475,266
1955.....	536,748,472	536,302,394	398,447,394	137,855,000	134,000,000	221,665,852
1956.....	579,573,811	578,802,924	374,597,924	204,205,000	202,000,000	234,727,789
1957.....	733,545,846	733,334,787	410,174,787	323,160,000	319,000,000	235,035,203
1958.....	639,453,741	639,453,741	407,553,741	231,900,000	229,000,000	236,245,229
Oats—						
Av. 1940-44.....	74,984,299	74,212,213	16,435,613	57,776,600	43,826,600	6,500,924
Av. 1945-49.....	70,725,656	69,841,382	18,954,582	50,866,800	41,042,800	5,091,295
1953.....	144,409,075	143,525,521	52,865,521	90,660,000	78,500,000	38,504,134
1954.....	125,768,957	125,768,957	28,518,957	97,250,000	85,000,000	19,848,364
1955.....	83,967,243	83,967,243	30,567,243	53,400,000	40,000,000	16,518,871
1956.....	119,105,841	118,285,166	47,085,166	71,200,000	60,000,000	24,269,986
1957.....	226,215,327	226,110,796	54,010,796	172,100,000	155,000,000	41,063,069
1958.....	154,915,634	154,915,634	46,915,634	108,000,000	88,000,000	32,224,900
Barley—						
Av. 1940-44.....	29,922,222	28,868,755	12,191,755	16,677,000	15,453,000	4,138,057
Av. 1945-49.....	29,747,854	29,512,098	12,702,098	16,810,000	16,140,000	3,842,261
1953.....	111,666,834	111,260,514	73,025,514	38,235,000	37,020,000	47,738,023
1954.....	145,910,370	145,910,370	49,100,370	96,810,000	95,000,000	31,750,779
1955.....	91,488,186	91,488,186	49,178,186	42,310,000	40,000,000	32,095,796
1956.....	110,947,935	110,947,935	60,482,935	50,465,000	49,000,000	33,152,220
1957.....	142,778,542	142,692,307	61,712,307	80,980,000	79,000,000	37,247,122
1958.....	118,165,290	117,989,504	60,489,504	57,500,000	55,000,000	35,260,649
Rye—						
Av. 1940-44.....	6,897,205	4,942,647	3,260,247	1,682,400	1,617,800	1,172,857
Av. 1945-49.....	3,273,777	3,123,572	2,023,372	1,100,200	1,053,400	544,436
1953.....	17,540,618	16,638,159	12,133,159	4,505,000	4,400,000	3,417,245
1954.....	22,235,477	22,235,477	6,425,477	15,810,000	15,650,000	3,616,842
1955.....	19,934,653	19,844,103	8,214,103	11,630,000	11,450,000	3,148,206
1956.....	15,713,037	15,639,314	6,134,314	9,505,000	9,400,000	3,392,699
1957.....	14,159,691	14,141,691	3,501,691	10,640,000	10,300,000	1,500,352
1958.....	10,061,953	9,997,471	3,967,471	6,030,000	5,200,000	1,723,029
Flaxseed—						
Av. 1940-44.....	1,923,885	1,923,885	1,667,525	256,360	251,700	373,895
Av. 1945-49.....	3,888,325	3,888,325	3,423,525	464,800	461,400	240,711
1953.....	4,301,420	4,301,420	2,468,420	1,833,000	1,800,000	972,940
1954.....	3,489,712	3,489,712	1,547,712	1,942,000	1,900,000	441,588
1955.....	2,587,064	2,587,064	909,064	1,678,000	1,650,000	98,586
1956.....	2,997,471	2,997,471	2,067,471	930,000	930,000	239,523
1957.....	7,580,565	7,580,565	6,060,565	1,520,000	1,500,000	1,644,943
1958.....	5,652,016	5,652,016	4,722,016	930,000	900,000	1,010,769

Subsection 5.—Livestock and Poultry

Livestock.—The numbers of livestock on farms in the different provinces for 1958 and 1959 are given in Table 16 and the average value per head of farm livestock is given, by province, in Table 17

16.—Livestock on Farms, by Province, at June 1, 1958 and 1959

Province and Item	1958	1959	Province and Item	1958	1959
	No.	No.		No.	No.
Newfoundland.....	..	..	Manitoba—		
Prince Edward Island—			Horses.....	65,000	60,000
Horses.....	12,500	10,600	Milk cows ¹	218,000	214,000
Milk cows ¹	42,400	40,800	Other cattle.....	647,000	669,000
Other cattle.....	71,600	68,200	Sheep.....	78,000	78,000
Sheep.....	33,000	34,000	Swine.....	455,000	505,000
Swine.....	51,000	63,000	Saskatchewan—		
Nova Scotia—			Horses.....	148,000	132,000
Horses.....	15,000	14,000	Milk cows ¹	254,000	248,000
Milk cows ¹	71,300	69,000	Other cattle.....	1,606,000	1,602,000
Other cattle.....	85,700	88,000	Sheep.....	175,000	187,000
Sheep.....	80,000	78,000	Swine.....	890,000	845,000
Swine.....	37,000	51,000	Alberta—		
New Brunswick—			Horses.....	132,000	120,000
Horses.....	16,500	14,500	Milk cows ¹	275,000	272,000
Milk cows ¹	80,500	75,000	Other cattle.....	2,225,000	2,298,000
Other cattle.....	89,500	86,000	Sheep.....	470,000	530,000
Sheep.....	67,000	65,000	Swine.....	1,710,000	1,780,000
Swine.....	59,000	70,000	British Columbia—		
Quebec—			Horses.....	24,000	23,000
Horses.....	147,000	138,000	Milk cows ¹	91,000	91,000
Milk cows ¹	1,082,000	1,083,000	Other cattle.....	309,000	329,000
Other cattle.....	908,000	917,000	Sheep.....	90,000	97,000
Sheep.....	320,000	290,000	Swine.....	52,000	68,000
Swine.....	1,060,000	1,290,000	Yukon and N.W.T......	..	..
Ontario—			Totals—		
Horses.....	115,000	112,000	Horses.....	675,000	624,100
Milk cows ¹	1,015,000	1,015,000	Milk cows ¹	3,129,200	3,107,800
Other cattle.....	1,930,000	1,955,000	Other cattle.....	7,871,800	8,012,200
Sheep.....	383,000	402,000	Sheep.....	1,696,000	1,761,000
Swine.....	1,850,000	2,200,000	Swine.....	6,164,000	6,872,000

¹ Cows and heifers, two years old or over, kept for milk purposes.

17.—Average Value per Head of Farm Livestock, by Province, 1958 and 1959

(Exclusive of Newfoundland and the Yukon and Northwest Territories)

Province and Item	1958	1959	Province and Item	1958	1959
	\$	\$		\$	\$
Prince Edward Island—			Quebec—		
Horses.....	95	109	Horses.....	162	178
All cattle.....	103	120	All cattle.....	119	128
Milk cows ¹	152	176	Milk cows ¹	160	173
Other cattle.....	75	86	Other cattle.....	70	76
Sheep.....	15	14	Sheep.....	15	14
Swine.....	35	25	Swine.....	34	27
Nova Scotia—			Ontario—		
Horses.....	118	135	Horses.....	130	142
All cattle.....	106	122	All cattle.....	153	164
Milk cows ¹	144	169	Milk cows ¹	214	233
Other cattle.....	75	85	Other cattle.....	121	128
Sheep.....	14	15	Sheep.....	21	19
Swine.....	32	28	Swine.....	40	29
New Brunswick—			Manitoba—		
Horses.....	134	151	Horses.....	98	106
All cattle.....	106	117	All cattle.....	130	144
Milk cows ¹	146	163	Milk cows ¹	180	202
Other cattle.....	71	76	Other cattle.....	113	126
Sheep.....	16	15	Sheep.....	16	16
Swine.....	34	28	Swine.....	32	24

¹ Cows and heifers, two years old or over, kept for milk purposes.

17.—Average Value per Head of Farm Livestock, by Province, 1958 and 1959—concluded

Province and Item	1958	1959	Province and Item	1958	1959
	No.	No.		No.	No.
Saskatchewan—			British Columbia—		
Horses.....	79	88	Horses.....	95	107
All cattle.....	128	140	All cattle.....	134	144
Milk cows ¹	180	202	Milk cows ¹	192	212
Other cattle.....	119	131	Other cattle.....	117	125
Sheep.....	18	15	Sheep.....	21	18
Swine.....	30	23	Swine.....	34	28
Alberta—			Totals—		
Horses.....	84	93	Horses.....	112	124
All cattle.....	127	140	All cattle.....	132	144
Milk cows ¹	188	211	Milk cows¹.....	193	201
Other cattle.....	120	131	Other cattle.....	112	122
Sheep.....	18	16	Sheep.....	18	16
Swine.....	33	24	Swine.....	35	26

¹ Cows and heifers, two years old or over, kept for milk purposes.

The federal Department of Agriculture inspects all livestock in plants designated as inspected establishments under the Meat and Canned Foods Act. A record is kept of these inspections and figures from 1944 are given in Table 18. Local wholesale butcherings and slaughterings carried out by retail butchers and by farmers for their own use are not included. Actually the slaughtering and meat packing industry is concentrated in a comparatively small number of large establishments to facilitate greater efficiency and utilization of products; thus the figures of Table 18 are fairly inclusive. The slaughtering and meat packing industry is dealt with in its proper relation to all other manufacturing enterprises in Chapter XIV of this volume. On a gross value basis it normally ranks among the three largest manufacturing industries in Canada but it owes its importance to the value of raw products obtained from the farmer and the rancher rather than to the value added by the manufacturing process.

18.—Livestock Slaughtered at Inspected Establishments 1944-58, and by Month 1958

(Exclusive of Newfoundland)

Year	Cattle	Calves	Sheep	Hogs	Year and Month	Cattle	Calves	Sheep	Hogs
	No.	No.	No.	No.		No.	No.	No.	No.
1944.....	1,354,121	661,245	959,169	8,766,417	1958				
1945.....	1,891,024	787,628	1,185,161	5,681,629	January....	158,353	40,960	29,828	438,710
1946.....	1,668,441	752,343	1,213,235	4,252,591	February....	135,427	35,582	25,774	419,725
1947.....	1,291,759	665,311	900,766	4,452,816	March.....	167,665	82,864	27,574	561,579
1948.....	1,489,883	787,410	768,943	4,487,649	April.....	130,392	105,484	18,766	429,723
1949.....	1,439,489	766,277	629,673	4,098,609	May.....	136,695	92,929	17,546	414,812
1950.....	1,284,683	773,205	521,089	4,405,055	June.....	176,362	92,320	27,957	494,564
1951.....	1,149,789	583,718	438,518	4,488,007	July.....	141,460	57,743	30,050	375,442
1952.....	1,237,630	567,760	512,966	6,234,145	August.....	160,343	54,985	49,356	402,767
1953.....	1,489,406	740,723	543,371	4,611,312	September...	194,820	71,338	99,607	528,388
1954.....	1,635,008	820,506	582,555	4,679,214	October.....	160,069	53,485	98,641	513,473
1955.....	1,702,108	828,658	591,586	5,543,787	November...	162,863	48,289	78,410	601,575
1956.....	1,874,363	891,615	599,974	5,548,289	December...	174,831	48,788	45,467	783,170
1957.....	1,986,251	887,102	581,903	4,971,477					
1958.....	1,889,280	784,767	548,976	5,963,928	Totals, 1958	1,889,280	784,767	548,976	5,963,928

Poultry.—Poultry on farms and their values are given in Table 19; production and consumption of poultry meat are included in Table 20.

19.—Numbers and Values of Poultry on Farms, by Province, as at June 1, 1957-59

Province and Year	Hens and Chickens		Turkeys		Geese		Ducks		Totals	
	No.	Value	No.	Value	No.	Value	No.	Value	No.	Value
	'000	\$'000	'000	\$'000	'000	\$'000	'000	\$'000	'000	\$'000
Newfoundland ¹.....1956	106	264	2	14	..	1	..	2	109	281
P. E. Island.....1957	770	759	11	25	9	23	6	9	796	816
1958	745	759	12	41	9	21	6	9	772	830
1959	740	757	15	43	9	22	7	10	771	832
Nova Scotia.....1957	1,832	2,466	56	142	2	6	1	2	1,891	2,616
1958	1,960	2,555	75	197	2	6	1	2	2,038	2,760
1959	2,190	2,784	32	95	2	6	1	1	2,225	2,886
New Brunswick.....1957	1,090	1,350	42	149	4	13	2	3	1,138	1,515
1958	1,125	1,352	55	213	4	13	2	3	1,186	1,581
1959	1,090	1,345	35	113	4	11	2	3	1,131	1,472
Quebec.....1957	11,300	12,170	610	1,817	10	30	40	64	11,960	14,081
1958	11,310	12,804	670	2,054	12	32	46	81	12,038	14,971
1959	10,500	11,546	750	2,082	10	28	53	98	11,313	13,754
Ontario.....1957	27,825	26,403	1,650	3,809	96	222	124	143	29,695	30,577
1958	31,165	31,435	1,950	5,518	110	301	130	166	33,355	37,420
1959	29,500	28,427	2,660	6,863	110	285	130	156	32,400	35,731
Manitoba.....1957	6,350	4,564	780	1,602	34	66	40	37	7,204	6,269
1958	6,980	5,433	950	1,939	42	82	44	43	8,016	7,497
1959	7,000	5,063	1,250	2,682	42	82	36	37	8,328	7,864
Saskatchewan.....1957	8,100	5,490	900	1,871	48	112	67	74	9,115	7,547
1958	8,300	5,905	1,145	2,515	50	116	70	77	9,565	8,613
1959	8,000	5,465	1,320	2,840	45	100	60	65	9,425	8,470
Alberta.....1957	9,750	7,306	860	1,994	80	168	90	96	10,780	9,564
1958	9,800	7,558	975	2,341	78	172	90	103	10,943	10,174
1959	9,690	6,997	1,050	2,520	75	167	85	95	10,900	9,779
British Columbia...1957	4,220	5,023	333	940	12	37	24	36	4,589	6,036
1958	4,345	5,089	325	1,042	11	31	30	43	4,711	6,205
1959	4,800	5,466	450	1,393	11	36	31	42	5,292	6,937
Totals.....1957	71,237	65,531	5,242	12,349	295	677	394	464	77,168	79,021
1958	75,739	72,890	6,157	15,860	318	774	419	527	82,624	90,051
1959	73,510	67,850	7,562	18,631	308	737	405	507	81,785	87,725

¹ Census data; annual estimates are not available.

20.—Production and Domestic Disappearance of Poultry Meat, 1958

(Eviscerated weight)

Item	Net Production	Total Supply	Domestic Disappearance	Per Capita Consumption
	'000 lb.	'000 lb.	'000 lb.	lb.
Fowl and chickens.....	341,761	371,415	345,355	20.3
Turkeys.....	106,157	118,856	100,809	5.9
Geese.....	3,060	3,306	3,082	0.2
Ducks.....	3,471	5,299	5,079	0.3
Totals, Poultry.....	454,449	498,876	454,325	26.6

Subsection 6.—Dairying

Milk Production.—Milk production in 1959 amounted to 18,191,963,000 lb., an increase of 138,080,000 lb. over production in the previous year. The proportion of the total milk production used for factory-made dairy products was 58.0 p.c. compared with 58.4 p.c. in 1958 and the proportion sold in fluid form 30.9 p.c. compared with 30.4 p.c. Milk used for all purposes on farms (home consumed, manufactured and fed) was 11.1 p.c. in 1959 compared with 11.2 p.c. in 1958.

21.—Production and Utilization of Milk, by Province, 1957-59

Province and Year	Used in Manufacture		Milk Otherwise Used			Total Milk Production
	On Farms	In Factories	Fluid Sales	Farm-Home Consumed	Fed on Farms	
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Newfoundland.....	..	..	..	..	..	..
Prince Edward Island.....1957	4,610	157,385	25,472	23,770	16,991	228,228
1958 ^r	3,814	167,712	26,212	23,840	12,985	234,563
1959	2,714	174,120	26,850	22,460	13,486	239,630
Nova Scotia.....1957	16,099	154,569	183,249	46,460	14,542	414,919
1958 ^r	15,327	147,779	182,392	47,460	16,680	409,638
1959	15,046	157,413	187,514	47,570	18,900	426,443
New Brunswick.....1957	28,454	213,837	150,565	41,590	19,473	453,919
1958 ^r	25,483	218,607	151,827	41,550	20,634	458,101
1959	18,767	208,782	156,260	41,700	22,990	448,499
Quebec.....1957	36,574	3,703,483	1,644,558	280,200	196,650	5,861,465
1958 ^r	30,069	3,892,023	1,666,584	283,900	198,770	6,071,346
1959	27,659	3,824,758	1,686,158	271,100	211,320	6,020,995
Ontario.....1957	17,948	3,275,351	2,004,073	226,500	214,100	5,737,972
1958 ^r	17,878	3,512,703	2,041,680	227,600	214,200	6,014,061
1959	17,644	3,604,517	2,111,370	230,300	234,800	6,198,631
Manitoba.....1957	38,423	596,874	300,371	98,980	49,200	1,083,848
1958 ^r	36,410	664,855	305,998	100,190	52,770	1,160,223
1959	34,164	639,853	311,539	101,460	52,520	1,139,536
Saskatchewan.....1957	78,413	654,908	301,246	179,000	53,700	1,267,267
1958 ^r	76,729	727,523	312,470	179,200	59,230	1,355,152
1959	63,437	710,899	323,322	176,100	63,740	1,337,498
Alberta.....1957	62,244	869,232	340,194	152,600	58,100	1,482,370
1958 ^r	61,846	924,417	348,403	151,400	59,090	1,545,156
1959	57,283	925,158	360,493	141,700	56,210	1,540,844
British Columbia.....1957	10,390	271,377	436,843	32,310	25,120	776,040
1958 ^r	8,026	283,015	455,862	32,360	26,380	805,643
1959	9,594	308,163	462,040	31,820	28,270	839,887
Totals.....1957	293,155	9,897,016	5,386,571	1,081,410	647,876	17,306,028
1958^r	275,582	10,538,634	5,491,428	1,087,500	660,739	18,053,883
1959	216,308	10,553,663	5,625,546	1,064,210	702,236	18,191,963

22.—Farm Values of Milk Production, by Province, 1957-59

Province and Year	Value of Milk Used in Manufacture		Value of Milk Otherwise Used			Value of Total Milk Production
	On Farms	In Factories	Fluid Sales	Farm-Home Consumed	Fed on Farms	
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	..	..	..	..	..	..
Prince Edward Island.....1957	120	3,496	968	613	919	6,116
1958 ^r	104	3,889	1,016	641	843	6,493
1959	74	4,138	1,054	615	866	6,747
Nova Scotia.....1957	392	3,557	8,153	1,319	886	14,307
1958 ^r	393	3,507	8,501	1,381	929	14,711
1959	386	3,827	8,963	1,408	957	15,541
New Brunswick.....1957	742	4,718	6,831	1,148	1,317	14,756
1958 ^r	697	5,053	6,861	1,209	1,374	15,194
1959	505	4,862	7,084	1,213	1,368	15,032
Quebec.....1957	922	86,645	67,130	7,649	13,905	176,251
1958 ^r	797	97,086	69,916	8,318	13,702	189,819
1959	745	97,710	70,883	8,133	13,836	191,307
Ontario.....1957	460	75,930	84,977	5,640	9,248	176,255
1958 ^r	481	83,142	88,251	6,122	10,463	188,459
1959	475	92,904	91,859	6,886	12,627	204,751
Manitoba.....1957	936	12,363	11,322	2,385	3,278	30,284
1958 ^r	934	14,603	12,037	2,545	3,669	33,788
1959	905	14,166	12,205	2,597	3,581	33,454
Saskatchewan.....1957	1,877	14,001	11,781	4,368	3,505	35,532
1958 ^r	1,902	16,502	12,643	4,623	3,939	39,609
1959	1,627	16,193	13,469	4,543	3,945	39,777
Alberta.....1957	1,490	19,500	14,381	3,815	3,984	43,170
1958 ^r	1,559	21,932	15,111	3,967	4,231	46,800
1959	1,469	21,937	15,605	3,713	4,134	46,858
British Columbia.....1957	258	9,530	23,974	895	782	35,439
1958 ^r	202	10,269	24,740	922	834	36,967
1959	238	11,108	26,326	999	990	39,661
Totals.....1957	7,197	229,740	229,517	27,832	37,824	532,110
1958^r	7,069	255,983	239,076	29,728	39,984	571,840
1959	6,424	266,845	247,448	30,107	42,304	593,128

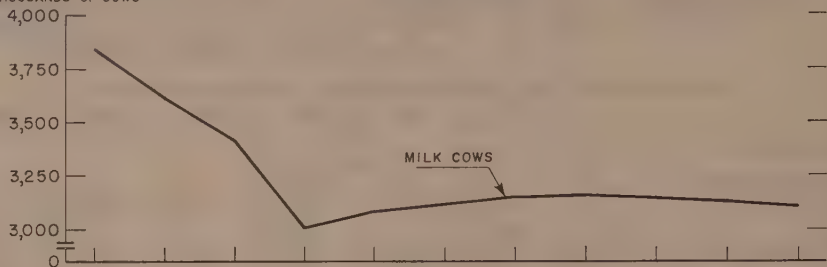
Butter, Cheese and Other Dairy Products.—Butter production in 1959 amounted to 338,548,000 lb., 11,356,000 lb. fewer than in 1958. The total included 325,300,000 lb. of creamery butter, 10,526,000 lb. of dairy or farm-made butter and 2,722,000 lb. of whey butter.

The 1959 factory cheese production was estimated at 118,568,000 lb., an increase of 16.6 p.c. over the 1958 estimate but 42.8 p.c. below the peak production of 207,431,000 lb. in 1942. Exports of cheese, mostly cheddar, amounted to 20,009,000 lb. in 1959 and 15,701,000 lb. in 1958 as compared with 135,409,000 lb. in 1945.

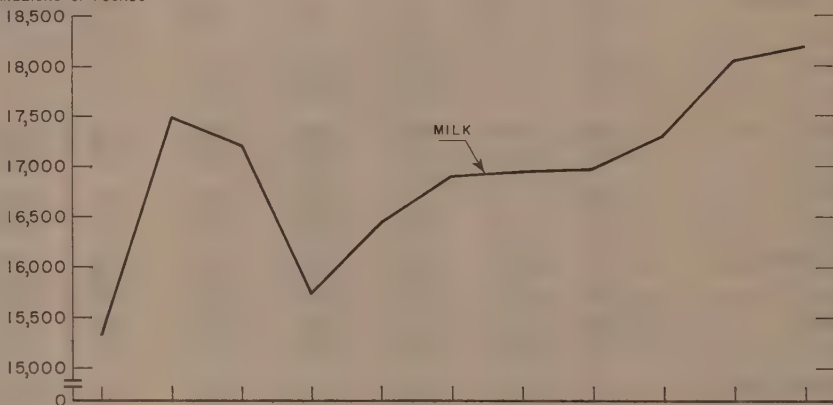
The over-all production of concentrated milk products in 1959 amounted to 584,330,000 lb., 1,987,000 lb. fewer than in 1958 but the production of ice cream continued its upward trend, reaching over 40,000,000 gal.

MILK COWS ON FARMS AND MILK, BUTTER AND CHEESE PRODUCTION

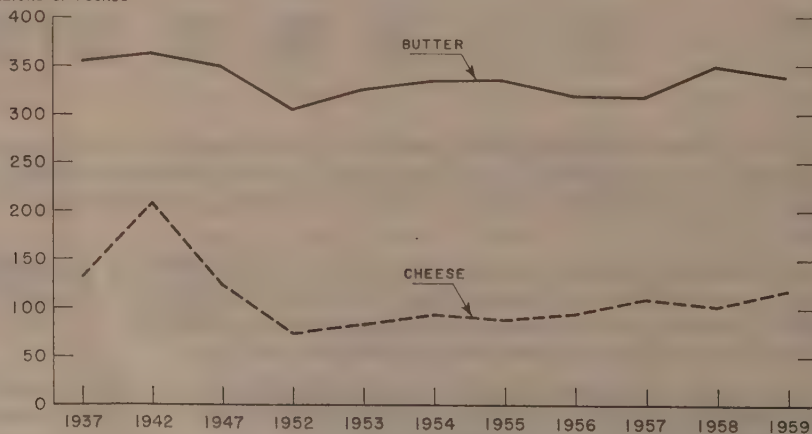
THOUSANDS OF COWS



MILLIONS OF POUNDS



MILLIONS OF POUNDS



23.—Production of Butter and Cheese, by Province, 1957-59

Province and Year	Butter				Cheese
	Creamery	Dairy	Whey	Total	Factory ¹
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Newfoundland.....	..	..	..	..	..
Prince Edward Island.....	1957 5,662	197	18	5,877	839
	1958 6,053	163	14	6,230	812
	1959 5,859	116	19	5,994	1,190
Nova Scotia.....	1957 5,026	688	—	5,714	—
	1958 ^r 4,856	655	—	5,511	—
	1959 4,490	643	—	5,133	—
New Brunswick.....	1957 8,048	1,216	—	9,264	960
	1958 ^r 8,314	1,089	—	9,403	830
	1959 7,831	802	—	8,633	767
Quebec.....	1957 122,136	1,563	340	124,039	31,141
	1958 133,542	1,285	262	135,089	27,280
	1959 127,127	1,182	273	128,582	37,584
Ontario.....	1957 77,422	767	1,885	80,074	72,104
	1958 ^r 89,452	704	1,857	92,073	69,337
	1959 87,110	754	2,425	90,289	75,843
Manitoba.....	1957 23,552	1,642	—	25,194	1,263
	1958 ^r 26,657	1,556	—	28,213	693
	1959 25,630	1,460	—	27,090	379
Saskatchewan.....	1957 26,482	3,351	—	29,833	52
	1958 29,509	3,279	—	32,788	46
	1959 28,671	2,711	—	31,382	190
Alberta.....	1957 32,161	2,660	5	34,826	1,822
	1958 ^r 34,327	2,643	4	36,974	1,635
	1959 34,315	2,448	5	36,768	1,577
British Columbia.....	1957 2,882	444	—	3,326	691
	1958 ^r 3,280	343	—	3,623	791
	1959 4,267	410	—	4,677	705
Totals.....	1957 303,371	12,528	2,248	318,147	109,119
	1958 ^r 335,990	11,777	2,137	349,904	101,727
	1959 325,300	10,526	2,722	338,548	118,568

¹ Factory-made cheese includes cheddar and other cheese made from whole milk and cream. Amounts for "other cheese" are included in Quebec and Ontario figures but, as fewer than three firms reported in the other provinces, data cannot be included except in the Canada total.

24.—Production of Concentrated Milk Products, 1956-59

(Exclusive of Newfoundland)

Product	1956	1957	1958 ^r	1959
	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Concentrated Whole Milk Products.....	365,934	380,107	361,884	367,798
Condensed milk.....	17,172	14,730	14,194	14,182
Evaporated milk.....	305,152	316,824	305,267	307,606
Whole milk powder.....	20,544	23,088	19,713	20,872
Partly skimmed evaporated milk.....	20,312	21,888	21,119	21,228
Other whole milk products ¹	2,754	3,577	1,591	3,910
Concentrated Milk By-products.....	119,722	159,951	224,433	216,532
Condensed skim milk.....	4,233	3,476	3,444	3,814
Evaporated skim milk.....	8,776	9,184	10,028	7,662
Skim milk powder.....	79,005	120,710	185,625	176,229
Powdered buttermilk.....	7,691	8,100	8,028	7,681
Whey powder.....	10,986	13,037	12,820	16,094
Casein.....	7,828	4,896	3,430	4,269
Other milk by-products ²	1,203	548	1,058	783
Totals.....	485,656	540,058	586,317	584,330

¹ Includes malted milk, cream powder, formula milks, whole milk powder of less than 26 p.c. fat, skimmed evaporated milk of 2 p.c. fat and sterilized cream manufactured by fewer than three firms. ² Includes sugar of milk (lactose), condensed buttermilk and special formula skim milk products manufactured by fewer than three firms.

25.—Production of Ice Cream, by Province, 1956-59

Province	1956	1957	1958 ^r	1959	Province	1956	1957	1958 ^r	1959
	'000 gal.	'000 gal.	'000 gal.	'000 gal.		'000 gal.	'000 gal.	'000 gal.	'000 gal.
Newfoundland.....	..	..	..	..	Manitoba.....	1,665	1,690	1,752	1,889
P. E. Island.....	174	179	195	231	Saskatchewan.....	1,963	2,012	2,120	2,207
Nova Scotia.....	1,385	1,454	1,460	1,631	Alberta.....	2,928	3,033	3,275	3,337
New Brunswick.....	869	878	874	1,002	British Columbia...	3,804	3,877	4,236	4,276
Quebec.....	8,190	8,705	9,036	10,128					
Ontario.....	12,255	13,289	13,618	15,316	Totals.....	33,233	35,117	36,566	40,017

Domestic Disappearance of Dairy Products.—The estimated consumption of fluid milk and cream, on a milk basis, amounted to 5,185,852,000 pt. in 1959, which amount was 85,908,000 pt. higher than the 1958 consumption. The daily average consumption per capita remained the same at 0.84 pt. The estimated consumption of milk and cream is given by province in Table 26 and the domestic disappearance of all dairy products in Table 27.

26.—Estimated Consumption of Milk and Cream (expressed as Milk), by Province, 1957-59

Province and Year	Estimated Consumption	Daily per Capita Consumption	Province and Year	Estimated Consumption	Daily per Capita Consumption
	'000 pt.	pt.		'000 pt.	pt.
Newfoundland.....	..	..	Manitoba.....1957	309,574	0.99
Prince Edward Island....1957	38,173	1.06	1958	314,875	0.99
1958	38,800 ^r	1.06	1959	320,154	0.99
1959	38,225	1.03	Saskatchewan.....1957	372,284	1.16
Nova Scotia.....1957	178,068	0.69	1958	381,140 ^r	1.17 ^r
1958	178,180	0.69	1959	387,148	1.17
1959	182,235	0.70	Alberta.....1957	382,010	0.90
New Brunswick.....1957	148,957	0.72	1958	387,444	0.88
1958	149,904	0.71	1959	389,297	0.86
1959	153,458	0.72	British Columbia.....1957	363,684	0.67
Quebec.....1957	1,492,059	0.86	1958	378,466	0.68 ^r
1958	1,512,003 ^r	0.85	1959	382,836	0.67
1959	1,517,253	0.83			
Ontario.....1957	1,729,124	0.84	Totals.....1957	5,013,933	0.85
1958	1,759,132 ^r	0.83	1958	5,099,944^r	0.84
1959	1,815,246	0.83	1959	5,185,852	0.84

27.—Domestic Disappearance of Dairy Products, 1957-59

Product	1957		1958 ^r		1959	
	Total	Per Capita ¹	Total	Per Capita ¹	Total	Per Capita ¹
	'000 lb.	lb.	'000 lb.	lb.	'000 lb.	lb.
Milk and Cream.....	6,467,981	400.17	6,578,928	396.08	6,689,756	393.68
Milk.....	5,488,211	339.55	5,578,167	335.83	5,658,215	332.97
Cream as milk.....	979,770	60.62	1,000,761	60.25	1,031,541	60.71
Cream as product.....	202,225	12.51	201,786	12.15	208,477	12.27
Butter.....	336,356	20.28	326,166	19.13	316,178	18.12
Creamery.....	321,554	19.38	312,255	18.32	303,033	17.37
Dairy.....	12,528	0.76	11,777	0.69	10,526	0.60
Whey.....	2,274	0.14	2,134	0.12	2,619	0.15

For footnote, see end of table.

27.—Domestic Disappearance of Dairy Products, 1957-59—concluded

Product	1957		1958 ^a		1959	
	Total	Per Capita ¹	Total	Per Capita ¹	Total	Per Capita ¹
	'000 lb.	lb.	'000 lb.	lb.	'000 lb.	lb.
Cheese	111,802	6.74	116,481	6.84	120,770	6.92
Cheddar.....	47,452	2.86	47,162	2.77	46,828	2.68
Process.....	44,879	2.71	48,533	2.85	50,153	2.88
Other.....	19,471	1.17	20,786	1.22	23,789	1.36
Concentrated Whole Milk Products² ...	345,744	20.84	343,380	20.13	348,511	19.99
Evaporated.....	302,342	18.23	302,212	17.73	305,760	17.53
Condensed.....	13,952	0.84	14,562	0.85	14,066	0.81
Powdered.....	4,577	0.28	3,320	0.19	3,879	0.22
Concentrated Milk By-products³	128,035	7.72	151,446	8.88	160,049	9.19
Evaporated.....	9,185	0.55	9,956	0.58	7,658	0.44
Condensed.....	3,511	0.21	3,432	0.20	3,789	0.22
Powdered.....	90,064	5.43	109,673	6.43	121,202	6.95
All Dairy Products in Terms of Milk—						
Butter.....	7,817,519	471.25	7,582,349	444.76	7,337,280	420.67
Cheese.....	1,088,413	65.61	1,129,301	66.24	1,168,215	66.98
Concentrated.....	805,409	48.55	787,745	46.20	804,607	46.13
Grand Totals⁴	16,776,311	1,021.57	16,699,945	989.74	16,680,147	966.46

¹ Includes Newfoundland for all manufactured dairy products.

malted milk, cream powder, partly skimmed evaporated milk, whole milk powder of less than 26 p.c. fat, formula milks, evaporated milk of 2 p.c. fat and sterilized cream.

² Includes, in addition to the items listed, i.e., condensed buttermilk, powdered buttermilk, sugar of milk, casein, powdered whey and special formula skim milk products. Since the quantities used for human consumption and livestock feeding cannot be separated, per capita figures include both.³ Includes milk by-products items not listed.⁴ Includes ice cream in terms of milk.

Subsection 7.—Fruits and Vegetables

Fruits.—Commercial fruit growing in Canada is confined almost exclusively to rather limited areas in the Provinces of Nova Scotia, New Brunswick, Quebec, Ontario and British Columbia. Nova Scotia production is centred mainly in the Annapolis Valley and New Brunswick production in the St. John River Valley and Westmorland County. The fruit growing districts of Quebec are the Montreal area, the North Shore area, the Eastern Townships and the Quebec City district. Ontario fruit is grown in all the counties adjacent to the St. Lawrence River and the Great Lakes as far west as Georgian Bay, the Niagara district being the most productive. In British Columbia the four well-defined fruit areas are the Okanagan Valley, the Fraser Valley, the Kootenay and Arrow Lakes district and Vancouver Island. The climate elsewhere in Canada is not generally suitable for commercial tree-fruit culture. In most producing areas, particularly in the Annapolis Valley of Nova Scotia, the Niagara Peninsula of Ontario and the Okanagan Valley of British Columbia, fruit growing is either the principal or one of the most important forms of agriculture and is of paramount importance to the economy of those areas. Apples and small fruits are produced commercially in the provinces named but tender tree fruits and commercial vineyards are largely limited to Ontario and British Columbia.

Strawberries are grown commercially in all provinces for which tree-fruit statistics are prepared, as well as in Prince Edward Island. However, this crop is produced over a somewhat wider area than are tree fruits. In Nova Scotia, for example, considerable quantities of strawberries are grown in Colchester County and farther north as well as

in the apple producing areas of the Annapolis Valley. In British Columbia most of the strawberries are grown in the Fraser Valley rather than in the predominantly tree-fruit producing area of the Okanagan Valley.

Raspberries are grown commercially in Nova Scotia, New Brunswick and Quebec but the bulk of the crop is produced in Ontario and British Columbia. The Fraser Valley of British Columbia is the most important producing area.

Wild blueberries are harvested on a commercial scale in Newfoundland, Prince Edward Island, Nova Scotia, New Brunswick and Quebec. This crop is indigenous to certain lands in these areas. Individuals who harvest the wild berries may undertake to burn the land from time to time for weed control and to effect pruning. Dusting is often carried out to control insects, and bees are sometimes introduced to secure better pollination. A large percentage of the crop is frozen and exported. Some blueberries are picked for sale in other provinces but no statistics of this trade are available. There is also some production of cultivated blueberries, particularly in British Columbia.

A marketing system has been developed for distributing fresh fruit from the specialized production areas to all parts of the country and a large proportion of the deciduous fruit consumed in Canada is grown domestically. Considerable quantities of apples, strawberries and blueberries are exported annually.

Canning and processing industries have developed in the fruit growing districts and, although the importance of the processing market varies with different fruits, it provides a valuable outlet for substantial proportions of most Canadian-grown fruit crops.

28.—Estimated Commercial Production and Farm Value of Fruit, 1956-58

Kind of Fruit and Year	Quantity	Weight	Farm Value	Average Farm Price per Unit of Quantity ¹	Kind of Fruit and Year	Quantity	Weight	Farm Value	Average Farm Price per Unit of Quantity ¹
	'000 bu.	'000 lb.	\$'000	\$		'000 bu.	'000 lb.	\$'000	\$
Apples—					Cherries (sour)—				
1956.....	12,424	559,080	16,048	1.29	1956.....	292	14,600	1,253	4.29
1957.....	15,630	703,350	18,035	1.15	1957.....	366	18,300	1,867	5.10
1958.....	17,006	765,270	14,729	0.87	1958.....	460	23,000	1,937	4.21
Pears—					Strawberries—	'000 qt.			
1956.....	1,400	70,000	2,853	2.04	1956.....	19,112	24,300	4,240	0.22
1957.....	1,094	54,700	2,201	2.01	1957.....	16,459	21,814	3,675	0.22
1958.....	1,521	76,050	2,986	1.96	1958.....	22,918	30,341	5,012	0.22
Plums and Prunes—					Raspberries—				
1956.....	534	26,700	896	1.68	1956.....	6,656	9,193	2,407	0.36
1957.....	566	28,300	946	1.67	1957.....	12,311	17,701	3,008	0.24
1958.....	648	32,400	1,194	1.84	1958.....	11,016	15,671	2,392	0.22
Peaches—					Loganberries—	'000 lb.			
1956.....	1,667	83,350	4,384	2.63	1956.....	279	279	53	0.19
1957.....	2,801	140,050	6,218	2.22	1957.....	1,050	1,059	161	0.15
1958.....	3,043	152,150	5,404	1.78	1958.....	893	893	134	0.15
Apricots—					Grapes—				
1956.....	84	4,200	194	2.31	1956.....	80,274	80,274	3,293	0.04
1957.....	281	14,050	523	1.86	1957.....	69,319	69,319	2,832	0.04
1958.....	231	11,550	443	1.92	1958.....	106,222	106,222	4,867	0.05
Cherries (sweet)—					Blueberries—				
1956.....	96	4,800	823	8.57	1956.....	14,958	14,958	2,290	0.15
1957.....	239	11,950	1,739	7.28	1957.....	13,756	13,756	1,888	0.14
1958.....	297	14,850	1,799	6.06	1958.....	16,283	16,283	2,365	0.15

¹ Price to growers (to pickers in the case of blueberries) for unpacked fruit.

29.—Quantity and Value of Commercial Fruit Produced, by Province, 1956-58

Province	Quantity			Value ¹		
	1956	1957 [*]	1958	1956	1957 [*]	1958
	'000 lb.	'000 lb.	'000 lb.	\$'000	\$'000	\$'000
Newfoundland.....	597	991	1,644	48	99	115
Prince Edward Island.....	2,092	1,506	1,868	344	239	303
Nova Scotia.....	107,528	138,279	71,305	2,467	2,711	1,564
New Brunswick.....	18,037	24,481	19,575	1,177	1,127	1,026
Quebec.....	140,026	121,100	216,248	6,023	4,995	6,212
Ontario.....	367,110	399,248	553,994	18,116	18,430	20,754
British Columbia.....	256,344	408,744	380,046	10,559	15,492	13,288
Totals.....	891,734	1,094,349	1,244,680	38,734	43,093	43,262

¹ Farm value (to pickers in the case of blueberries) for unpacked fruit.

Vegetables.—Estimates of acreage and production of commercial vegetables in Canada are prepared for all provinces except Newfoundland, Prince Edward Island and Saskatchewan. The Province of Ontario is the largest producer, followed by Quebec and British Columbia. A wide variety of crops is grown in these three provinces while a somewhat smaller range of crops is produced in the Maritimes and in the Prairie Provinces.

Canning, freezing and processing of vegetables are carried on in the important producing areas. The estimates in the following tables cover output of commercial growers only and do not include any acreages or production of vegetables grown for home use on farms or elsewhere.

30.—Estimated Commercial Acreage of Vegetables, by Province, 1956-58

Province	1956	1957 [*]	1958
	acres	acres	acres
Nova Scotia ¹	3,720	4,740	5,120
New Brunswick ¹	950	910	1,320
Quebec.....	52,440	53,710	53,970
Ontario.....	106,160	115,270	100,390
Manitoba ²	5,620	1,990	3,070
Alberta ²	10,890	12,000	13,790
British Columbia.....	17,830	17,250	14,520
Totals.....	197,610	205,870	192,180

¹ Acreages of peas in Prince Edward Island and New Brunswick are included with Nova Scotia.

² Acreages of beans, corn and peas in Manitoba are included with Alberta.

**31.—Estimated Commercial Acreage and Production of Vegetables 1956-58,
with Average for 1950-54**

Vegetable	Av. 1950-54		1956		1957 ¹		1958	
	Area	Production	Area	Production	Area	Production	Area	Production
	acres	'000 lb.	acres	'000 lb.	acres	'000 lb.	acres	'000 lb.
Asparagus.....	2,840	5,967	3,770	7,585	3,800	7,505	3,930	7,922
Beans ¹	8,600	42,390	9,170	38,860	11,200	50,380	11,550	49,335
Beets.....	3,140	51,520	3,770	53,870	3,890	55,285	3,330	46,911
Cabbage.....	6,610	115,590	6,930	121,193	6,480	109,185	7,200	162,060
Carrots.....	7,820	145,053	8,720	164,120	10,210	174,035	11,940	246,467
Cauliflower.....	2,490	26,983	2,570	24,528	2,100	22,986	2,600	29,292
Celery.....	2,290	52,239	2,430	45,189	2,300	45,638	2,310	68,547
Corn ²	44,020	216,925	44,400	216,422	47,080	307,201	44,430	311,962
Lettuce.....	4,940	64,130	4,840	47,050	4,730	43,240	6,060	80,894
Onions.....	6,700	126,197	5,890	99,608	5,720	111,863	6,360	115,066
Peas ³	41,620	88,923	54,280	101,848	54,980	145,878	38,090	97,745
Spinach.....	1,420	13,777	1,100	12,913	1,070	11,021	1,040	10,844
Tomatoes.....	45,440	648,744	49,740	607,658	51,380	617,727	51,400	811,335

¹ Estimates apply only to that portion of the crop grown for processing in Quebec, Ontario, Manitoba and Alberta in 1956, 1957 and 1958. ² Estimates apply only to that portion of the crop grown for processing in Quebec and Manitoba in 1956; in Quebec, Manitoba and Alberta in 1957; and in Quebec in 1958. ³ Estimates apply only to that portion of the crop grown for processing in all provinces for which estimates are made except British Columbia in 1956, 1957 and 1958.

Subsection 8.—Other Principal Farm Products

Tobacco.—The chief tobacco growing area of Canada is located in southern Ontario in the counties adjacent to Lake Erie. Most of the cigarette tobacco comes from this district. In Ontario in 1958, 117,274 acres of flue-cured or Bright Virginia type tobacco and 7,024 acres of Burley tobacco were harvested. These are the most important types grown in Canada though dark air-cured and fire-cured tobacco as well as cigar tobacco are grown on a limited scale. The only other important production comes from Quebec. In 1958, 5,588 acres of flue-cured tobacco, 3,085 acres of cigar tobacco and 569 acres of pipe tobacco were harvested in that province.

A study of Department of National Revenue reports on tax-paid withdrawals of tobacco products reveals changes in the smoking habits of Canadians during the past three decades. In 1922, the first year for which comparable figures are available, Canadian per capita consumption of cigarettes was 229, cigars 20, cut tobacco 1.3 lb., plug tobacco 1.1 lb. and snuff about 1.3 oz. By 1958 the annual per capita consumption of cigarettes had increased to 1,901, cigars had increased slightly over the previous year to 18.9, cut tobacco went up to 1.6 lb. in 1954 but declined to 1.2 in 1958, and plug tobacco had declined considerably.

**32.—Acreage, Production and Value of the Commercial Crop of Leaf Tobacco, by Province,
1954-58 with Average for 1949-53**

Year	Quebec			Ontario			British Columbia		
	Har-vested Area	Pro-duction	Value	Har-vested Area	Pro-duction	Value	Har-vested Area	Pro-duction	Value
	acres	'000 lb.	\$	acres	'000 lb.	\$	acres	'000 lb.	\$
Av. 1949-53.....	9,010	8,885	2,655,000	95,404	129,558	55,174,800	103	120	45,000
1954.....	10,863	11,110	3,579,000	120,804	173,569	74,174,000	88	84	35,000
1955.....	12,987	13,766	4,117,000	96,833	120,981	53,531,000	89	93	37,000
1956.....	11,291	10,252	3,013,000	116,356	151,589	69,001,000	75	99	40,000
1957.....	9,786	8,333	2,854,000	126,961	166,488	75,716,000	40	44	19,000
1958.....	9,517	8,901	3,255,000	124,557	188,364	86,333,000	40	27	10,000

33.—Acreage, Production and Value of the Commercial Crop of Leaf Tobacco, by Main Type, 1954-58 with Average for 1949-53

Type of Tobacco and Year	Harvested Area	Average Yield per Acre	Total Production	Average Farm Price per lb.	Gross Farm Value
	acres	lb.	lb.	cts.	\$
Flue-cured.....Av. 1949-53	95,190	1,330	126,648,000	43.2	54,735,000
1954	122,815	1,410	173,159,000	43.1	74,777,000
1955	98,311	1,202	118,206,000	45.3	53,535,000
1956	117,614	1,265	148,743,000	46.1	68,578,000
1957	126,353	1,201	151,743,000	49.2	74,699,000
1958	122,914	1,475	181,290,000	46.5	84,380,000
Burley.....Av. 1949-53	4,204	1,369	5,756,000	30.3	1,745,000
1954	3,122	1,431	4,470,000	30.2	1,353,000
1955	4,033	1,737	7,005,000	30.1	2,109,000
1956	4,496	1,563	7,028,000	31.4	2,210,000
1957	6,000	1,353	8,116,000	32.7	2,658,000
1958	7,299	1,642	11,984,000	34.8	4,168,000
Cigar leaf.....Av. 1949-53	2,990	1,209	3,616,000	22.9	827,000
1954	3,781	1,280	4,840,000	23.2	1,125,000
1955	4,570	1,279	5,846,000	20.5	1,199,000
1956	3,235	1,174	3,797,000	19.9	756,000
1957	3,300	1,181	3,897,000	24.0	935,000
1958	3,085	1,009	3,122,000	24.5	765,000
Totals¹.....Av. 1949-53	104,512	1,326	138,564,000	41.8	57,874,000
1954	131,755	1,402	184,763,000	42.1	77,788,000
1955	109,909	1,227	134,840,000	42.8	57,685,000
1956	127,722	1,274	161,940,000	44.5	72,059,000
1957	136,787	1,205	164,865,000	47.7	78,589,000
1958	134,126	1,471	197,302,000	45.4	89,603,000

¹ Includes other types not specified.

Sugar Beets and Beetroot Sugar.—Sugar beets are grown commercially in Quebec, Ontario, Manitoba and Alberta and beet sugar factories are located in these provinces. In Quebec, commercial production is centred in the St. Hilaire area of the Eastern Townships and in Ontario is confined largely to the southwestern section of the province; factories are located at Wallaceburg and Chatham. Alberta produces the largest crop and, because in that province sugar beets are grown under irrigation, yields average above those in the other provinces.

34.—Acreage, Yield and Value of Sugar Beets and Quantity and Value of Refined Beetroot Sugar Produced 1954-58, with Average for 1949-53

Year	Sugar Beets					Refined Beetroot Sugar		
	Harvested Area	Yield per Acre	Total Yield	Average Price per Ton	Total Value	Quantity	Value	Price per lb.
	acres	tons	tons	\$	\$	lb.	\$	cts.
Av. 1949-53.....	90,687	10.73	972,659	14.81	14,409,000	263,302,843	25,701,756	9.76
1954.....	90,453	11.10	1,003,869	12.06	12,108,000	232,074,736	20,170,474	8.69
1955.....	81,908	11.98	981,014	13.42	13,170,000	274,516,924	23,348,325	8.51
1956.....	78,786	11.33	892,872	17.33	15,470,000	246,621,644	21,505,407	8.72
1957.....	83,743	12.58	1,053,564	13.24	13,948,000	261,683,900	26,341,596	10.06
1958.....	97,845	13.54	1,324,759	14.47	19,175,000	339,878,748	30,928,966	9.10

Eggs.—The net production of eggs in 1958 was 449,819,000 doz. which was 3,343,000 doz. more than in the previous year. This increase occurred because the moderate decrease in the number of layers was more than offset by an increase in the rate of lay. Domestic disappearance, not including hatching eggs, amounted to 423,404,000 doz. as compared with 421,098,000 doz. in 1957. Per capita consumption for the year 1958 was 24.8 doz.

35.—Production, Utilization and Value of Farm Eggs, by Province, 1958

Province	Average Number of Layers	Average Pro- duction per 100 Layers	Net Eggs Laid ¹	Sold ²	Used by Pro- ducers ²	Value per Dozen ³	Total Value Sold and Used
	'000	No.	'000 doz.	'000 doz.	'000 doz.	cts.	\$'000
Newfoundland.....	--	--	--	--	--	--	--
Prince Edward Island.....	382	17,493	5,583	4,809	774	33.2	1,853
Nova Scotia.....	1,170	20,133	19,342	17,784	1,558	44.6	8,624
New Brunswick.....	513	18,250	7,720	6,216	1,504	48.3	3,726
Quebec.....	3,945	18,291	59,488	50,273	9,215	42.1	25,032
Ontario.....	11,738	19,747	191,408	179,298	12,110	39.2	75,048
Manitoba.....	2,661	18,254	39,990	35,558	4,432	29.4	11,741
Saskatchewan.....	3,057	17,120	43,202	33,385	9,817	27.7	11,964 [*]
Alberta.....	3,405	16,941	47,602	39,112	8,490	30.4	14,452
British Columbia.....	2,205	19,531	35,484	32,869	2,615	38.4	13,637
Totals.....	29,076	18,765	449,819	399,304	50,515	36.9	166,077

¹ Total laid less loss.

² Includes eggs used for hatching.

³ Average value at farms for all purposes.

Wool.—Canada's wool requirements are met largely by imports which amounted to 42,209,000 lb. (greasy basis) in 1958 and 47,331,000 lb. in 1957. Exports amounted to 4,002,000 lb. in 1958 and 3,917,000 lb. in 1957. The apparent domestic consumption of wool shown in Table 36 is determined on the basis of production, exports and imports but does not take into consideration changes in stocks for which the data are not available. Differences in wool utilization from year to year are therefore probably less marked than indicated by these figures.

36.—Production and Apparent Consumption of Wool, 1953-58

Item	1953	1954	1955	1956 ¹	1957	1958
Shorn Wool—						
Yield per fleece..... lb.	7.4	7.4	7.3	7.3	7.2	7.4
Total yield shorn..... '000 lb.	6,166	6,272	6,253	6,165	6,050	6,345
Price per pound..... cts.	38.6	37.8	35.3	37.8	41.4	48.4 ²
Total value of shorn wool..... \$'000	2,377	2,367	2,208	2,328	2,507	3,071
Total pulled wool..... '000 lb.	1,862	1,555	1,595	1,707	1,825	1,279
Total wool production..... "	8,028	7,828	7,848	7,872	7,875	7,524
Apparent consumption..... "	66,390	45,686	58,355	61,517	51,289	45,731

¹ Census figures.

² The 1958 average values include 28 cents per lb. payment to producers by the Agricultural Stabilization Board on graded wool.

Honey.—Honey is produced commercially in all provinces of Canada except Newfoundland, Ontario being the largest producer. There is a considerable movement of honey from the Prairie Provinces to other parts of Canada. In recent years exports have been small, imports being higher than exports.

Honey statistics have been compiled on an all-Canada basis since 1924 and show that the largest recorded crop was in 1948 when 45,145,000 lb. were produced. Production in 1958 was 27,509,000 lb.

In order to facilitate storage, shipment and uniformity of quality, considerable quantities of Canadian honey are pasteurized. Beekeepers' marketing co-operatives are active in several provinces. Bees are kept in some of the fruit growing districts mainly for purposes of pollination.

37.—Beekeepers and Bee Colonies, Production and Value of Honey and Beeswax 1956-58, with Average for 1950-54

Year	Bee-keepers	Bee Colonies	Honey				Beeswax		Value of Honey and Wax
			Average Production per Hive	Total Production	Average Price per lb. to Producers	Total Value	Production	Value	
	No.	No.	lb.	lb.	cts.	\$	lb.	\$	\$
Av. 1950-54	17,170	380,500	77	29,345,000	16	4,585,000	430,000	195,000	4,780,000
1956	14,410	330,000	74	24,272,000	18	4,419,000	355,000	180,000	4,599,000
1957	15,040	325,700	98	32,051,000	18	5,906,000	473,000	253,000	6,159,000
1958	13,150	332,700	83	27,509,000	17	4,632,000	408,000	187,000	4,819,000

38.—Honey Production, by Province, 1956-58 with Average for 1950-54

Province	Av. 1950-54	1956	1957	1958
	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Newfoundland	69	92	55	65
Prince Edward Island	122	161	170	162
Nova Scotia	118	101	90	98
New Brunswick	3,866	2,941	3,728	2,407
Quebec	11,952	6,372	11,111	5,678
Ontario	4,729	5,000	5,208	5,316
Manitoba	3,211	3,348	3,819	4,043
Saskatchewan	4,149	4,724	6,459	7,574
Alberta	1,129	1,533	1,411	2,166
British Columbia				
Totals	29,345	24,272	32,051	27,509

Maple Sugar and Syrup.—Maple syrup is produced in the Provinces of Nova Scotia, New Brunswick, Quebec and Ontario. The bulk of the crop comes from the Eastern Townships of Quebec, a district famous both in Canada and the United States as the centre of the maple products industry. Virtually all of the maple products exported are sent to the United States with the larger proportion moving as sugar, although substantial quantities of syrup are also shipped.

Much of the syrup sold in Canada is marketed in one-gallon cans direct to the consumer from the producer but a considerable amount of both sugar and syrup is sold each year to processing firms.

39.—Estimated Production of Maple Sugar and Maple Syrup, by Province, 1956-58 with Average for 1950-54

Province and Year	Maple Sugar			Maple Syrup			Total Value, Sugar and Syrup
	Quantity	Average Price per lb.	Value	Quantity	Average Price per gal.	Value	
	lb.	cts.	\$	gal.	\$	\$	\$
Nova Scotia—							
Av. 1950-54 ¹	12,000	53.0	6,000	5,000	4.04	19,000	26,000
1956.....	8,000	65.0	5,000	3,000	5.57	17,000	22,000
1957.....	16,000	61.0	10,000	6,000	5.65	34,000	44,000
1958.....	16,000	67.0	11,000	5,000	5.91	30,000	41,000
New Brunswick—							
Av. 1950-54 ¹	72,000	48.0	34,000	10,000	4.35	45,000	79,000
1956.....	37,000	58.0	21,000	10,000	5.08	51,000	72,000
1957.....	96,000	60.0	58,000	19,000	4.99	95,000	153,000
1958.....	77,000	58.0	45,000	14,000	4.98	70,000	115,000
Quebec—							
Av. 1950-54 ¹	1,518,000	40.1	608,000	2,103,000	3.69	7,764,000	8,373,000
1956.....	535,000	43.0	230,000	2,335,000	3.57	8,336,000	8,566,000
1957.....	536,000	44.0	236,000	2,705,000	3.08	8,328,000	8,564,000
1958.....	690,000	44.0	302,000	2,066,000	3.11	6,435,000	6,737,000
Ontario—							
Av. 1950-54 ¹	25,000	46.0	12,000	346,000	4.20	1,453,000	1,464,000
1956.....	6,000	65.0	4,000	270,000	4.71	1,272,000	1,276,000
1957.....	13,000	52.0	7,000	338,000	4.65	1,574,000	1,581,000
1958.....	32,000	56.0	18,000	318,000	4.81	1,529,000	1,547,000
Totals—							
Av. 1950-54 ¹	1,627,000	40.6	660,000	2,461,000	3.77	9,282,000	9,942,000
1956.....	586,000	44.4	260,000	2,618,000	3.70	9,676,000	9,936,000
1957.....	661,000	47.0	311,000	3,068,000	3.27	10,031,000	10,342,000
1958.....	815,000	46.0	376,000	2,403,000	3.36	8,064,000	8,440,000

¹ Five-year average prices are derived from actual figures but quantities and values are rounded to the nearest thousand.

Nursery Stock.—Statistics concerning the nursery industry in Canada for the eighteen-month period ended Dec. 31, 1957 and for the calendar year 1958 are presented in Tables 40 and 41. All nurseries were asked to report quantities sold of stock propagated or imported during these periods. Stock purchased from other nurseries in Canada was excluded to prevent duplication. A total of 279 nurseries reported shipments in 1958 as compared with 269 the previous season. Provincial distribution was as follows: Ontario 147, British Columbia 55, Quebec 32, Manitoba 15, the Maritime Provinces 13, Alberta 10 and Saskatchewan 7.

40.—Nursery Stock Shipments, by Type, 1956-57 and 1958

Classification	1956-57 ¹			1958		
	Domestic Shipments	Imported Shipments	Total	Domestic Shipments	Imported Shipments	Total
	No.	No.	No.	No.	No.	No.
Fruit Trees, Shrubs, Plants—						
Apple species.....	309,953	250	310,203	420,588	7,305	427,893
Tender tree-fruit species.....	300,817	21,250	322,067	275,542	32,542	308,084
Small fruit species.....	4,613,054	3,752	4,616,806	4,419,675	184,746	4,604,421
Other species.....	544,127	—	544,127	501,285	12,158	513,443
Ornamental Species—						
Rose bushes.....	595,000	508,895	1,103,895	460,879	520,373	981,252
Other ornamental shrubs.....	3,761,850	737,238	4,499,088	3,167,209	882,142	4,049,351
Deciduous trees.....	424,103	25,384	449,487	381,068	114,253	495,321
Evergreen trees.....	1,382,406	499,706	1,882,112	1,329,200	383,260	1,712,460
Ornamental climbers.....	46,948	24,386	71,334	43,306	19,816	63,122
Bulbs and tubers.....	5,061,270	2,792,969	7,854,239	3,783,225	4,475,131	8,258,356
Herbaceous perennials.....	890,595	16,337	906,932	785,748	223,160	1,008,908

¹ July 1, 1956 to Dec. 31, 1957; commencing Jan. 1, 1958, data refer to calendar year.

41.—Acreage of Nursery Stock, by Province, 1956-57 and 1958

Province	1956-57 ¹		1958	
	Fruit Species	Ornamental Species	Fruit Species	Ornamental Species
	acres	acres	acres	acres
Quebec ²	32.3	176.2	76.2	195.5
Ontario.....	577.0	1,772.6	485.9	2,094.1
Prairie Provinces.....	52.8	440.2	80.2	271.3
British Columbia.....	16.2	118.0	158.7	151.7
Totals.....	678.3	2,507.0	801.0	2,712.6

¹ July 1, 1956 to Dec. 31, 1957; commencing Jan. 1, 1958, data refer to calendar year.
Provinces for which insufficient information was reported.

² Includes Maritime

Subsection 9.—Prices of Agricultural Produce

The monthly index of farm prices of agricultural products was designed to measure changes occurring in the average prices farmers receive at the farm from the sale of farm products. In comparing current index numbers with those before August 1957, certain points should be considered. Western grain prices used in the construction of the index before Aug. 1, 1957 are final prices for all grains. Since Aug. 1, 1958, only initial prices are available for western wheat, oats and barley. Any subsequent participation payments made on the 1958 crops will be added to the prices currently used and the index revised upward accordingly.

42.—Average Index Numbers of Farm Prices of Agricultural Products, by Province, 1950-58 and Monthly Indexes for 1957 and 1958

(1935-39=100)

NOTE.—A description of this index, its coverage and the methods used will be found in *DBS Quarterly Bulletin of Agricultural Statistics* (Catalogue No. 21-003) for October-December 1946.

Year and Month	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
1950 Averages.....	189.6	206.5	216.8	260.9	265.1	274.4	251.5	276.2	244.3	260.8
1951 Averages.....	236.4	243.2	250.8	305.6	315.0	301.6	268.7	308.0	287.1	296.8
1952 Averages.....	351.6	275.1	344.5	290.2	286.2	266.8	245.9	265.3	291.4	274.4
1953 Averages.....	191.5	234.8	213.2	272.1	263.8	245.3	228.7	247.8	265.7	250.4
1954 Averages.....	196.1	230.2	211.8	264.3	252.8	227.5	208.7	232.4	249.6	236.8
1955 Averages.....	220.6	220.0	226.0	261.7	249.2	225.6	203.5	223.2	248.5	232.7
1956 Averages.....	240.1	208.7	235.1	258.8	250.5	227.0	208.5	224.0	256.9	234.6
1957:										
January.....	230.8	222.4	245.1	267.1	257.1	221.7	197.9	222.6	271.5	235.6
February.....	204.7	219.3	223.5	266.5	258.9	222.0	199.0	224.3	270.5	235.8
March.....	207.3	218.7	221.1	264.4	253.2	221.7	198.3	220.8	268.4	232.9
April.....	204.3	218.4	224.4	261.5	253.6	220.7	198.5	221.7	262.8	232.5
May.....	204.4	218.4	229.5	260.7	252.7	221.7	199.4	222.2	260.0	232.6
June.....	192.6	217.1	208.9	266.2	253.7	224.3	201.9	226.9	259.2	234.5
July.....	182.0	213.4	214.3	270.0	263.8	223.4	201.7	228.4	258.6	238.0
August.....	209.6	211.7	222.7	269.8	260.9	227.1	204.4	230.9	261.7	239.1
September.....	189.4	203.2	212.5	266.3	257.9	224.9	206.9	228.4	257.0	236.8
October.....	180.6	203.5	207.6	260.9	250.0	221.2	204.2	222.0	252.7	231.3
November.....	178.4	201.9	210.6	258.8	249.2	217.2	201.1	215.1	249.7	228.4
December.....	179.7	202.7	212.3	264.8	254.4	222.6	205.3	220.1	250.6	233.1
1957 Averages.....	197.0	212.6	219.4	264.8	255.4	222.4	201.6	223.6	260.2	234.2

42.—Average Index Numbers of Farm Prices of Agricultural Products, by Province, 1950-58 and Monthly Indexes for 1957 and 1958—concluded

Year and Month	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
1958										
January.....	189.2	206.1	213.6	265.3	253.9	225.7	206.6	223.1	256.9	234.6
February.....	193.1	206.9	217.3	271.2	261.1	230.6	210.0	228.7	257.7	239.8
March.....	276.7	221.6	261.6	274.7	267.0	232.7	211.3	232.3	262.4	245.4
April.....	246.6	223.6	260.1	278.9	270.9	238.6	214.1	236.1	269.6	248.9
May.....	191.5	216.0	229.6	282.3	278.0	242.7	217.0	242.0	273.6	252.3
June.....	176.7	218.6	210.1	284.5	276.9	241.5	215.4	237.6	267.1	250.2
July.....	198.6	219.9	253.5	282.6	274.1	239.1	213.1	236.6	264.4	249.3
August.....	219.5	228.2	224.7	279.1	266.8	224.7	195.4	221.4	261.2	238.5
September.....	191.4	216.6	217.6	271.0	262.5	223.7	198.1	222.0	255.0	235.9
October.....	181.1	214.4	207.7	269.1	263.0	222.2	198.9	224.5	260.8	236.2
November.....	191.8	213.7	214.0	267.5	259.9	224.3	198.8	223.6	262.1	235.4
December.....	195.8	215.6	214.7	270.3	264.1	227.0	200.3	224.3	264.0	237.8
1958 Averages.....	204.3	216.8	227.0	274.7	266.5	231.1	206.6	229.4	262.9	242.0

Monthly prices of grain and monthly prices of livestock are shown in *DBS Quarterly Bulletin of Agricultural Statistics* (Catalogue No. 21-003).

43.—Average Cash Prices per Bushel of Canadian Cereals (Basis, in Store at Fort William and Port Arthur, Ont.), Crop Years Ended July 31, 1949-58

NOTE.—Statistics for 1926-48 are given in the corresponding table of previous Year Books.

Year Ended July 31—	Averages in Cents and Eighths per Bushel				
	Wheat, ¹ No. 1 N.	Oats, ² No. 2 C.W.	Barley, ² No. 2 C.W. —6 Row	Rye, ³ No. 2 C.W.	Flaxseed, ⁴ No. 1 C.W.
	cts.	cts.	cts.	cts.	cts.
1949.....	183/3	78/1	124/3	140	403/14
1950.....	183/3	90/4	158/7	146	371/6
1951.....	185/6	95/4	147/4	184/5	441/4
1952.....	183/5	90/6	132/5	193/5	428/1
1953.....	181/7	79/7	133/5	158/2	329
1954.....	156/3	72/7	108/1	99/1	283/6
1955.....	165/1	89/5	123/4	112/2	309/1
1956.....	160/7	82/7	116/5	110/1	360/1
1957.....	158/7*	79/4	114/2	119/7	298/4
1958.....	162/1	75/4	106/4	106	303

¹ Initial payments plus additional payments to producers.

² Based on cash closing prices, Winnipeg Grain Exchange.

³ Average cash closing price, Winnipeg Grain Exchange, except where otherwise noted.

⁴ Winnipeg Grain Exchange renewed trading in flaxseed cash and futures on Aug. 16, 1948. The Canadian Wheat Board was authorized to buy all flaxseed offered to it during the 1948-49 crop year on the basis of \$4 per bushel for No. 1 C.W. in store Fort William-Port Arthur, Ont.

44.—Yearly Average Prices per 100 lb. of Canadian Livestock at Principal Markets, 1955-58

Item	Toronto				Montreal			
	1955	1956	1957	1958	1955	1956	1957	1958
	\$	\$	\$	\$	\$	\$	\$	\$
Steers, up to 1,000 lb., good.....	19.60	18.80	19.05	22.90 ¹	20.20	18.95	18.55	22.45 ¹
Steers, up to 1,000 lb., medium.....	17.56	17.35	17.27	21.47 ¹	17.61	17.20	17.04	20.94 ¹
Steers, up to 1,000 lb., common.....	13.46	14.09	14.10	19.56 ¹	14.25	13.89	13.99	17.55 ¹
Steers, over 1,000 lb., good.....	19.60	19.07	18.82	...	20.23	19.56	18.41	...
Steers, over 1,000 lb., medium.....	17.53	17.37	17.05	...	18.04	17.61	17.29	...
Steers, over 1,000 lb., common.....	13.61	14.00	13.90	...	14.86	14.30	14.82	...
Heifers, good.....	17.67	16.88	17.10	21.06	17.10	16.29	16.11	19.65
Heifers, medium.....	15.88	16.67	15.20	19.71	14.37	13.88	14.26	17.81
Calves, fed, good.....	20.13	19.89	19.76	23.02	20.04	19.26	19.22	19.69
Cows, good.....	12.60	11.90	12.65	16.95	12.90	12.40	13.40	17.20
Cows, medium.....	11.79	11.12	11.62	19.05	11.27	11.01	11.63	15.66
Bulls, good.....	13.37	13.31	14.19	19.33	13.22	13.42	14.38	19.47
Stocker and feeder steers, good.....	18.75	18.20	18.50	23.50	17.36	2	2	2
Stocker and feeder steers, common.....	16.30	16.02	16.15	20.86	2	16.00	2	2
Stock cows and heifers, good.....	2	2	2	2	2	2	2	2
Stock cows and heifers, common.....	2	2	2	2	2	2	2	2
Calves, veal, good and choice.....	23.80	24.40	25.15	30.60	20.70	21.40	21.40	26.50
Calves, veal, common and medium.....	17.83	17.88	18.43	23.79	17.18	16.97	16.19	20.85
Hogs, Grade B-1, dressed.....	25.05	26.50	30.05	28.13	25.30	25.60	30.35	28.05
Lambs, good.....	20.40	22.05	22.45	22.35	19.15	19.55	19.46	19.72
Lambs, common.....	16.93	17.50	17.35	18.08	15.71	15.63	15.26	16.51
Sheep, good.....	8.37	8.62	8.49	8.36	9.75	8.48	9.10	9.18

Item	Winnipeg				Edmonton			
	1955	1956	1957	1958	1955	1956	1957	1958
	\$	\$	\$	\$	\$	\$	\$	\$
Steers, up to 1,000 lb., good.....	18.45	17.80	17.85	21.95 ¹	17.85	17.00	16.95	20.74 ¹
Steers, up to 1,000 lb., medium.....	16.25	15.82	15.74	20.58 ¹	16.35	15.54	15.40	19.23 ¹
Steers, up to 1,000 lb., common.....	12.57	12.73	12.39	17.99 ¹	12.34	11.80	12.22	16.89 ¹
Steers, over 1,000 lb., good.....	18.45	18.02	17.72	...	17.84	16.85	16.91	...
Steers, over 1,000 lb., medium.....	15.98	16.29	15.55	...	16.33	15.63	15.18	...
Steers, over 1,000 lb., common.....	12.48	13.54	12.42	...	14.02	13.33	12.95	...
Heifers, good.....	15.82	15.64	16.55	20.42	15.42	14.91	15.12	19.06
Heifers, medium.....	13.55	13.47	13.89	18.31	13.76	12.86	13.28	17.71
Calves, fed, good.....	18.18	17.87	17.54	21.76	17.34	16.58	16.51	20.03
Cows, good.....	11.85	10.95	11.90	16.60	11.05	10.05	11.00	15.17
Cows, medium.....	10.02	9.69	10.61	15.40	9.85	9.15	10.08	14.26
Bulls, good.....	11.73	11.01	12.66	18.12	11.40	10.67	12.63	17.70
Stocker and feeder steers, good.....	16.05	16.20	17.00	21.60	15.53	15.10	16.12	21.23
Stocker and feeder steers, common.....	12.39	12.81	14.19	18.38	12.33	12.51	13.47	18.32
Stock cows and heifers, good.....	12.23	11.54	12.17	18.50	11.19	10.86	12.06	16.61
Stock cows and heifers, common.....	9.18	9.35	10.11	16.58	8.43	8.13	9.60	14.54
Calves, veal, good and choice.....	23.30	23.20	23.65	28.45	20.75	18.90	19.60	24.85
Calves, veal, common and medium.....	16.47	16.02	16.98	22.46	13.52	13.31	14.90	18.63
Hogs, Grade B-1, dressed.....	22.05	23.40	28.20	25.20	22.20	23.40	27.55	24.59
Lambs, good.....	17.60	18.25	18.60	18.85	17.70	18.25	18.76	19.80
Lambs, common.....	14.17	13.74	15.06	15.87	16.00	15.81	16.49	16.96
Sheep, good.....	4.56	4.65	4.78	4.62	8.28	8.07	9.00	13.25

¹ All weights; beginning in 1958 prices for steers are not classified by weight.² No sales reported.

Subsection 10.—Food Consumption

Food consumption figures represent available supplies, including production and imports, adjusted for change of stocks, exports, marketing losses and industrial uses. All calculations are made at the retail stage of distribution, except for meats for which the figures are worked out at the wholesale stage. The amount of food actually eaten would be somewhat lower than indicated because of losses and waste occurring after the products

reach the hands of the consumer. It should also be pointed out that there are minor inaccuracies in certain of the figures since statistics of storage stocks in the hands of retailers and consumers are not available.

All basic foods are classified under 13 main commodity groups. The total for each group is computed using a common denominator for the group, for example: milk solids (dry weight) in the dairy products group; fat content for fats and oils; and fresh equivalent for fruits. All foods are included in their basic form, that is, as flour, fat, sugar, etc., rather than in more highly manufactured forms.

The series in Table 45 represents the official estimates of yearly supplies of food moving into consumption, expressed in pounds per capita, for the years 1935-39 as an average for comparison with the years 1956, 1957 and 1958.

45.—Per Capita Supplies of Food Moving into Consumption 1956-58, with Average for 1935-39

NOTE.—Many of the figures for 1956 and 1957 have been revised since the publication of the 1959 Year Book.

Kind of Food and Weight Base	Pounds per Capita per Annum				Percentages of 1935-39 Average		
	Average 1935-39	1956	1957	1958	1956	1957	1958 ^a
Cereals.....Retail wt.	205.7	163.5	155.6	160.2	79.5	75.6	77.9
Flour (including rye flour) ¹"	184.8	145.1	138.8	142.8	78.5	75.1	77.3
Oatmeal and rolled oats....."	7.3	5.4	5.2	4.9	74.0	71.2	67.1
Pot and pearl barley....."	0.3	0.3	0.2	0.2	100.0	66.7	66.7
Corn meal and flour....."	1.4	0.8	0.8	1.1	57.1	57.1	78.6
Buckwheat flour....."	0.2	0.1	0.1	0.1	50.0	50.0	50.0
Rice....."	4.3	5.1	4.3	4.4	118.6	100.0	102.3
Breakfast food....."	7.4	6.7	6.2	6.7	90.5	83.8	90.5
Potatoes.....Retail wt.	192.9	153.9	161.7	135.9	79.8	83.8	70.5
Potatoes, white....."	192.3	153.3	161.1	135.4	79.7	83.8	70.4
Potatoes, sweet....."	0.6	0.6	0.6	0.5	100.0	100.0	83.3
Sugars and Syrups.....Sugar content	101.7	107.1	101.5	105.5	105.3	99.8	103.7
Sugar.....Refined wt.	94.7	99.3	93.6	97.5	104.9	98.8	103.0
Maple sugar.....Retail wt.	1.8	0.9	0.6	0.8	50.0	33.3	44.4
Other....."	8.2	10.9	11.3	11.3	132.9	137.8	137.8
Starch.....Retail wt.	2.5	1.6	1.6	1.6	64.0	64.0	64.0
Pulses and Nuts.....Retail wt.	14.5	11.7	10.9	10.3	80.7	75.2	71.0
Dry beans....."	3.7	3.8 ²	3.3 ²	3.7 ²	102.7	89.2	100.0
Dry peas....."	5.7	2.2	1.8	1.4	38.6	31.6	24.6
Peanuts.....Shelled wt.	2.2	3.2	3.0	2.8	145.5	136.4	127.3
Tree nuts....."	1.1	1.2	1.3	1.1	109.1	118.2	100.0
Cocoa.....Green beans	3.7	2.8	3.1	2.7	75.7	83.8	73.0
Fruit.....Fresh equiv.	138.7	229.4	219.1	215.6	165.4	158.0	155.4
Tomatoes and Citrus Fruit—							
Tomatoes, fresh.....Retail wt.	15.4	18.3	15.3	17.2	118.8	99.4	111.7
Tomato products.....Net wt. canned	10.0	17.7	17.0	16.4	177.0	170.0	164.0
Citrus fruit, fresh.....Retail wt.	25.1	36.1	35.5	29.0	143.8	141.4	115.5
Citrus fruit juice.....Net wt. canned	0.5	14.6	15.9	14.6	2,920.0	3,180.0	2,920.0
Other Fruit—							
Fresh.....Retail wt.	40.5	70.0	63.4	67.6	172.8	156.5	166.9
Canned.....Net wt. canned	6.3	16.2	14.5	14.4	257.1	230.2	228.6
Dried.....Processed wt.	8.3	5.5	5.3	6.1	66.3	63.9	73.5
Juice.....Net wt. canned	...	5.3	4.6	5.3	...	...	...
Frozen.....Retail wt.	0.2	1.6	1.6	2.1	800.0	800.0	1,050.0

For footnotes, see end of table.

45.—Per Capita Supplies of Food Moving into Consumption 1956-58, with
Average for 1935-39—concluded

Kind of Food and Weight Base	Pounds per Capita per Annum				Percentages of 1935-39 Average		
	Average 1935-39	1956	1957	1958	1956	1957	1958
Vegetables.....Fresh equiv.	78.4	96.7	94.3	98.4	123.3	120.3	125.5
Fresh—							
Cabbage and greens.....Retail wt.	16.2	19.1	18.4	21.4	117.9	113.6	132.1
Carrots....."	15.4	11.8	11.8	14.4	76.6	76.6	93.5
Legumes....."	6.2	3.0	2.9	2.5	48.4	46.8	40.3
Other....."	29.8	36.7	36.2	36.9	123.2	121.5	123.8
Canned.....Net wt. canned	10.8	20.0	19.8	17.8	185.2	183.3	164.8
Frozen.....Retail wt.	...	2.1	2.0	2.1	...	...	...
Oils and Fats.....Fat content	41.4	42.8	42.4	42.9	103.4	102.4	103.6
Margarine.....Retail wt.	...	7.7	7.8	8.5	...	...	...
Lard....."	3.9	7.4	7.4	7.5	189.7	189.7	192.3
Shortening....."	10.6	9.7	9.2	9.6	91.5	86.8	90.6
Salad and cooking oil....."	1.8	2.7	2.9	3.2	150.0	161.1	177.8
Butter....."	31.0	20.5	20.3	19.1	66.1	65.5	61.6
Eggs.....Fresh equiv.	30.7	36.4^a	38.1^a	37.2^a	118.6	124.1	121.2
Meat.....Carcass wt.	118.1	142.9	142.5	138.1	121.0	120.7	116.9
Pork....."	39.8	49.5	40.2	51.8	124.4	116.1	130.2
Beef....."	54.7	72.0	74.8	64.8	131.6	136.7	118.5
Veal....."	10.5	8.6	9.0	8.8	81.9	85.7	83.8
Mutton and lamb....."	5.6	2.6	2.6	2.7	46.4	46.4	48.2
Offal.....Edible wt.	5.8	5.3	5.3	4.8	91.4	91.4	82.8
Canned meat.....Net wt. canned	1.4	5.3	5.2	5.6	378.6	371.4	400.0
Poultry and Fish.....Edible wt.	22.4	32.1	32.5	...	143.3	145.1	...
Hens and chickens.....Eviscerated wt.	12.2	19.2 ^a	19.4 ^a	20.3 ^a	157.4	159.0	166.4
Other poultry.....Eviscerated wt.	2.3	6.4 ^a	6.6 ^a	6.4 ^a	278.3	287.0	278.3
Fish and shellfish, fresh and frozen.....Edible wt.	^a	7.2	6.9	...	^a	^a	...
Fish, cured (smoked, salted, pickled)....."	^a	1.7	1.9	...	^a	^a	...
Fish and shellfish, canned.....Net wt. canned	2.7	4.5	4.7	...	166.7	174.1	...
Milk and Cheese.....Milk solids	52.0	65.3	65.2	65.7	125.6	125.4	126.3
Cheddar cheese ^b.....Retail wt.	3.7	5.3	5.6	5.5	143.2	151.4	148.6
Other cheese....."	0.2	1.1	1.2	1.2	550.0	600.0	600.0
Cottage cheese....."	0.2	1.1	1.1	1.1	550.0	550.0	550.0
Evaporated whole milk....."	6.1	18.6	18.2	18.0	304.9	298.4	295.1
Condensed whole milk....."	0.6	0.9	0.8	0.9	150.0	133.3	150.0
Whole milk powder....."	0.1	0.3	0.3	0.2	300.0	300.0	200.0
Condensed skim milk....."	0.4	0.3	0.2	0.2	75.0	50.0	50.0
Skim milk powder....."	1.8	5.1	5.4	6.5	283.3	300.0	361.1
Evaporated skim milk....."	0.1	0.6	0.6	0.6	600.0	600.0	600.0
Condensed buttermilk....."	0.1	0.1	—	—	100.0	—	—
Milk in ice cream....."	10.9	35.1	36.0	36.4	322.0	330.3	333.9
Powdered buttermilk....."	0.2	0.5	0.5	0.5	250.0	250.0	250.0
Fluid whole milk ^c"	408.5	405.1 ^a	400.2 ^a	396.1 ^a	99.2	98.0	97.0
Beverages.....Primary distribution wt.	7.2	10.9	11.2	11.2	151.4	155.6	155.6
Tea....."	3.5	2.8	2.8	2.6	80.0	80.0	74.3
Coffee.....Green beans	3.7	8.1	8.4	8.6	218.9	227.0	232.4

¹ Fluctuations in apparent per capita flour consumption are caused partly by lack of complete data on flour inventories in all positions. ² Includes soybean flour. ³ Exclusive of Newfoundland. ⁴ Break-down according to current classification not available. ⁵ Includes process cheese. ⁶ Includes cream expressed as milk.

Disappearance of Meats and Lard.—Production of meats from slaughter in Canada, total supply, distribution and per capita disappearance of meats and lard are shown in Table 46. All estimates are on a carcass-weight basis except canned meats which are in terms of product.

46.—Supply, Distribution and Disappearance of Meats and Lard 1954-58, with Average for 1946-50

Item	Average 1946-50	1954	1955	1956	1957*	1958
Beef—						
Animals slaughtered in Canada..... '000	1,923.3	2,222.3	2,271.1	2,441.2	2,602.5	2,324.4
Estimated dressed weight..... '000 lb.	909,487	1,078,927	1,102,619	1,182,517	1,288,238	1,163,595
On hand, Jan. 1..... "	30,708	33,103	23,648	29,682	33,251	29,689
Imports for consumption ¹ "	3,554	18,499	19,829	18,266	21,974	26,458
Total supply..... "	943,749	1,130,529	1,146,096	1,230,465	1,343,463	1,219,742
Exports ¹ "	101,672	22,580	12,787	18,634	55,312	63,925
Used for canning..... "	39,108	11,625	18,197	20,713	17,974	19,374
On hand, Dec. 31..... "	27,217	23,648	29,682	33,251	29,689	30,913
DOMESTIC DISAPPEARANCE..... "	775,752	1,072,676	1,085,430	1,157,867	1,240,488	1,105,530
PER CAPITA DISAPPEARANCE..... lb.	60.0	70.2	69.1	72.0	74.8	64.8
Veal—						
Animals slaughtered in Canada..... '000	1,310.1	1,254.0	1,295.0	1,336.7	1,381.2	1,430.7
Estimated dressed weight..... '000 lb.	132,957	131,723	134,551	140,220	150,551	150,796
On hand, Jan. 1..... "	5,509	5,199	3,700	4,662	5,701	5,214
Imports for consumption..... "	2	2	2	2	2	2
Total supply..... "	138,466	136,922	138,251	144,882	156,252	156,010
Exports..... "	2	2	2	2	2	2
Used for canning..... "	2,608	1,366	1,297	1,483	957	1,240
On hand, Dec. 31..... "	5,080	3,700	4,662	5,701	5,214	4,533
DOMESTIC DISAPPEARANCE..... "	130,778	131,856	132,292	137,698	150,081	150,237
PER CAPITA DISAPPEARANCE..... lb.	10.1	8.6	8.4	8.6	9.0	8.8
Mutton and Lamb—						
Animals slaughtered in Canada..... '000	1,077.7	720.7	754.9	761.6	766.8	727.2
Estimated dressed weight..... '000 lb.	47,640	30,702	32,385	32,292	33,356	31,779
On hand, Jan. 1..... "	6,843	3,359	2,901	4,816	4,865	4,693
Imports for consumption..... "	103	7,291	10,796	9,546	11,015	21,547
Total supply..... "	54,586	41,352	46,082	46,654	49,236	58,019
Exports..... "	5,522	53	273	45	472	1,377
Used for canning..... "	508	301	330	628	558	1,022
On hand, Dec. 31..... "	6,113	2,901	4,816	4,865	4,693	9,426
DOMESTIC DISAPPEARANCE..... "	42,443	38,097	40,663	41,116	43,513	46,194
PER CAPITA DISAPPEARANCE..... lb.	3.3	2.5	2.6	2.6	2.6	2.7
Pork—						
Animals slaughtered in Canada..... '000	6,840.4	6,143.7	6,932.2	6,899.3	6,515.5	7,766.4
Estimated dressed weight..... '000 lb.	890,307	795,609	887,708	887,250	847,015	1,012,739
On hand, Jan. 1..... "	37,773	28,731	32,280	34,965	20,571	23,821
Imports for consumption ¹ "	3,891	1,525	167	154	1,512	1,744
Total supply..... "	931,971	825,865	920,155	922,369	869,098	1,038,304
Exports ¹ "	188,311	60,607	64,109	55,408	38,183	63,493
Used for canning..... "	46,628	39,093	48,844	50,574	40,147	47,816
On hand, Dec. 31..... "	37,452	32,280	34,965	20,571	23,821	44,711
DOMESTIC DISAPPEARANCE..... "	659,580	693,885	772,237	795,816	766,947	882,784
PER CAPITA DISAPPEARANCE..... lb.	51.0	45.4	49.2	49.5	46.2	51.8

For footnotes, see end of table.

**46.—Supply, Distribution and Disappearance of Meats and Lard 1954-58, with
Average for 1946-50—concluded**

Item	Average 1946-50	1954	1955	1956	1957 ¹	1958
Canned Meats—						
Estimated production..... '000 lb.	89,749	58,397	76,200	81,699	69,540	75,909
On hand, Jan. 1..... "	15,362	36,102	15,165	20,775	18,764	18,844
Imports for consumption..... "	4,814	15,904	15,620	13,662	21,274	21,212
Total supply..... "	109,425	110,343	106,985	116,136	109,578	115,965
Exports..... "	56,589	26,226	14,919	11,442	5,241	6,314
On hand, Dec. 31..... "	8,807	15,165	20,775	18,764	18,844	13,833
DOMESTIC DISAPPEARANCE..... "	44,029	68,952	71,291	85,930	85,493	95,818
PER CAPITA DISAPPEARANCE..... lb.	3.4	4.5	4.5	5.3	5.2	5.6
Offal—						
Estimated production..... '000 lb.	81,218	82,935	88,185	91,797	93,362	94,339
On hand, Jan. 1..... "	6,090	5,169	5,348	5,042	5,146	5,867
Imports for consumption ¹ "	973	3,759	3,763	2,360	3,150	758
Total supply..... "	88,281	91,863	97,296	99,199	101,658	100,964
Exports ¹ "	5,834	8,954	7,112	6,831	5,587	11,590
Used for canning..... "	9,631	3,871	2,099	2,285	1,598	2,039
On hand, Dec. 31..... "	5,796	5,348	5,042	5,146	5,867	4,724
DOMESTIC DISAPPEARANCE..... "	67,020	73,690	83,043	84,937	88,606	82,611
PER CAPITA DISAPPEARANCE..... lb.	5.2	4.8	5.3	5.3	5.3	4.8
Lard—²						
Estimated production..... '000 lb.	124,129	111,677	125,572	126,498	115,791	145,162
On hand, Jan. 1..... "	2,620	4,916	5,490	5,707	4,866	6,823
Imports for consumption..... "	9,358	2,850	6,195	15,301	28,015	5,224
Total supply..... "	136,106	119,443	137,257	147,506	148,672	157,209
Exports..... "	431	676	1,312	320	8	475
On hand, Dec. 31..... "	3,102	5,490	5,707	4,866	6,823	8,606
DOMESTIC DISAPPEARANCE..... "	132,573	113,277	130,238	142,320	141,841	148,128
PER CAPITA DISAPPEARANCE..... lb.	10.2	7.4	8.3	8.9	8.6	8.7

¹ Excluding canned meats. ² Included with beef. ³ Includes commercial lard production and estimated lard equivalent of renderable pork fat available from all uninspected slaughter.

Section 5.—Agricultural Statistics of the Census*

Census of Agriculture statistics relating to farms, farm mechanization, electrification and area are included in this Section. More detailed information may be obtained from the *Census of Canada 1956*, Volume II.

For census purposes a farm is defined as a holding on which agricultural operations are carried out and which is three acres or more in size, or from one to three acres in size, and with an agricultural production in 1955 valued at \$250 or more. The holding may consist of a single tract of land or of a number of separate tracts held under the same or different tenures, and operated as a single unit. Where the farm was made up of several parts located in different municipalities, the 1956 Census reported the complete farm as one unit in the municipality where the headquarters was located. The same definition was used in the 1951 Census.

Farms Classified by Tenure and Condition.—Brief statistical information on the tenure and condition of occupied farm land as recorded at the 1951 and 1956 Censuses

* Prepared in the Agriculture Section of the Census Division, Dominion Bureau of Statistics.

is given at pp. 455-456 of the 1957-58 Year Book. Figures showing the farm land in each province under crop, improved pasture, summer fallow, woodland and other condition as at June 1, 1956 are given in the land classification table on p. 20 of this volume.

Number of Farms.—The number of farms in Canada at June 1, 1956, was 575,015, a decrease of 48,076 from the 623,091 farms recorded in the 1951 Census. As compared with 1951, all the provinces showed decreases in number of farms ranging from 5.8 p.c. in Alberta to 34.2 p.c. in Newfoundland.

47.—Number of Farms, by Province, Censuses of 1951 and 1956

Province or Territory	1951	1956	Percentage Change 1951-56
	No.	No.	
Newfoundland.....	3,626	2,387	-34.2
Prince Edward Island.....	10,137	9,432	-7.0
Nova Scotia.....	23,515	21,075	-10.4
New Brunswick.....	26,431	22,116	-16.3
Quebec.....	134,336	122,617	-8.7
Ontario.....	149,920	140,602	-6.2
Manitoba.....	52,383	49,201	-6.1
Saskatchewan.....	112,018	103,391	-7.7
Alberta.....	84,315	79,424	-5.8
British Columbia.....	26,406	24,748	-6.3
Yukon and Northwest Territories.....	4	22	+450.0
Canada.....	623,091	575,015	-7.7

Area of Farm Land.—The total area of occupied farm land in Canada was 0.1 p.c. less in 1956 than in 1951. Decreases in the Atlantic Provinces, Ontario, Quebec and British Columbia were slightly greater than increases in the Prairie Provinces.

48.—Area of Farm Land, by Province, Censuses of 1951 and 1956

Province or Territory	1951	1956	Percentage Change 1951-56
	acres	acres	
Newfoundland.....	85,040	71,814	-15.6
Prince Edward Island.....	1,095,304	1,065,463	-2.7
Nova Scotia.....	3,173,691	2,775,642	-12.5
New Brunswick.....	3,470,234	2,981,449	-14.1
Quebec.....	16,786,405	15,910,128	-5.2
Ontario.....	20,880,054	19,879,646	-4.8
Manitoba.....	17,730,393	17,931,817	+1.1
Saskatchewan.....	61,663,195	62,793,979	+1.8
Alberta.....	44,459,632	45,970,395	+3.4
British Columbia.....	4,702,274	4,538,881	-3.5
Yukon and Northwest Territories.....	432	4,477	+936.3
Canada.....	174,046,654	173,923,691	-0.1

Farm Machinery.—The upward trend in the number of machines on farms in Canada continued through the 1951-56 period. For Canada as a whole, all types of machines included in the 1956 Census showed an increase in number and in farms reporting them.

49.—Farm Machinery, by Province, Censuses of 1951 and 1956

Province and Year	Automobiles		Tractors		Motor Trucks		Gasoline Engines		Grain Combines	
	No.	Farms Re- porting	No.	Farms Re- porting	No.	Farms Re- porting	No.	Farms Re- porting	No.	Farms Re- porting
Newfoundland.....1951	185	189	126	110	507	476	136	118	—	—
1956	268	255	296	272	735	686	83	66	—	—
P. E. Island.....1951	4,147	4,021	2,776	2,714	1,679	1,614	3,813	3,181	18	18
1956	4,511	4,305	4,840	4,588	3,247	3,089	3,619	2,658	238	238
Nova Scotia.....1951	6,970	6,757	4,307	4,056	5,687	5,308	2,178	1,901	16	16
1956	8,209	7,804	6,537	6,024	7,200	6,685	2,510	2,025	88	88
New Brunswick.....1951	7,999	7,808	5,221	5,023	4,786	4,528	2,439	2,299	211	211
1956	8,757	8,413	7,646	7,017	5,614	5,197	1,478	1,341	598	598
Quebec.....1951	41,602	40,937	31,971	30,835	19,167	18,438	30,692	28,589	420	418
1956	52,738	51,492	54,322	50,291	28,758	27,382	21,480	19,446	1,481	1,475
Ontario.....1951	114,870	107,031	105,204	92,065	41,486	38,481	20,243	16,524	10,031	9,856
1956	117,321	105,574	136,062	105,792	58,041	52,859	24,289	18,214	16,644	16,294
Manitoba.....1951	32,060	30,848	50,984	40,641	21,163	19,937	17,370	14,150	15,268	14,663
1956	32,619	31,312	59,265	42,236	28,556	26,255	24,305	18,689	21,425	20,679
Saskatchewan.....1951	62,963	60,916	106,664	90,307	52,626	49,277	55,763	41,630	42,997	41,215
1956	64,941	62,692	121,388	91,768	74,498	66,076	100,732	63,253	61,861	58,699
Alberta.....1951	46,314	44,431	79,282	65,369	39,723	35,732	46,003	34,248	20,852	19,569
1956	47,714	44,778	94,156	68,393	58,749	49,974	63,462	41,024	33,531	31,317
British Columbia....1951	12,557	12,103	13,148	11,535	9,291	8,460	4,407	3,375	687	665
1956	14,933	13,804	15,282	12,422	11,758	10,254	7,896	5,196	1,060	995
Canada.....1951 ¹	329,667	315,021	399,686	312,658	196,122	182,255	183,051	146,018	90,500	86,631
1956 ¹	352,018	330,436	499,811	388,816	277,183	248,474	249,779	171,925	136,927	130,384

¹ Includes the Yukon and Northwest Territories.

Farm Electrification.—Nearly three-quarters of the farms in Canada reported electric power in 1956. Provinces were divided into two distinct groups—above and below the national average of 73.5 p.c. In the first group were Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba and British Columbia, in which the percentage of farms reporting electric power ranged from 81.9 p.c. in British Columbia to 89.1 p.c. in Ontario. The second group included Newfoundland, Prince Edward Island, Saskatchewan and Alberta where the percentages ranged from 39.7 p.c. in Prince Edward Island to 51.5 p.c. in Alberta.

50.—Farm Electrification, by Province, Census 1956

Province	Farms Reporting One or More Sources of Power	Source of Supply		
		Power Line	Wind Electric	Other Sources
	No.	No.	No.	No.
Newfoundland.....	1,059	1,010	4	45
Prince Edward Island.....	3,748	3,678	5	67
Nova Scotia.....	18,677	18,604	10	66
New Brunswick.....	19,328	18,969	64	297
Quebec.....	108,015	107,259	215	553
Ontario.....	125,310	124,873	79	365
Manitoba.....	41,464	41,003	66	399
Saskatchewan.....	43,778	34,819	3,421	5,604
Alberta.....	40,937	35,844	1,312	3,839
British Columbia.....	20,279	19,334	19	930
Canada ¹	422,604	405,396	5,195	12,171

¹ Includes the Yukon and Northwest Territories.

Section 6.—International Crop Statistics

Tables 51 and 52 are based on estimates published on Jan. 11, 1960 and Feb. 12, 1960 by the Foreign Agricultural Service, United States Department of Agriculture, and give the acreages and production of wheat and the production of oats and barley for the harvests of 1957 and 1958, with averages for the years 1950-54, in the leading countries of the world.

51.—Estimated Acreages and Production of Wheat Harvested in 1957 and 1958 in Specified Countries, with Average for 1950-54

NOTE.—Many of the averages and the figures for 1957 have been revised since the publication of the 1959 Year Book.

Continent and Country	Acreages of Wheat			Production of Wheat		
	Average 1950-54	1957	1958	Average 1950-54	1957	1958
	'000 acres	'000 acres	'000 acres	'000 bu.	'000 bu.	'000 bu.
North America¹	91,200	67,380	76,370	1,654,000	1,388,000	1,880,000
Canada.....	26,130	21,117	20,899	537,632	385,508	371,730
Mexico.....	1,647	2,365	1,977	21,788	50,560	45,930
United States.....	63,361	43,806	53,404	1,094,183	950,662	1,461,714
Europe¹	71,440	73,440	73,590	1,640,000	1,950,000	1,865,000
Europe, West ¹	46,020	47,970	48,240	1,150,000	1,370,000	1,345,000
Austria.....	573	636	650	16,920	21,090	20,160
Belgium.....	421	514	542	20,278	27,590	28,600
Denmark.....	195	159	190	10,630	10,030	10,100
Finland.....	377	280	313	8,739	6,500	7,900
France.....	10,916	11,534	11,404	315,244	407,200	353,000
Germany, West.....	2,728	3,000	3,226	110,228	140,630	136,080
Greece.....	2,410	2,709	2,750	40,042	63,460	65,600
Ireland.....	362	405	418	13,036	19,115	12,620
Italy.....	12,085	12,375	12,300	288,080	310,000	360,000
Luxembourg.....	45	—	—	1,382	1,400	1,550
Netherlands.....	209	245	275	11,376	14,430	14,700
Norway.....	56	35	20	1,682	1,100	620
Portugal.....	1,785	2,011	2,063	23,526	29,280	29,900
Spain.....	10,470	10,820	10,872	155,000	180,000	167,000
Sweden.....	896	823	698	29,640	26,125	22,540
Switzerland.....	225	260	261	9,430	11,390	12,270
United Kingdom.....	2,263	2,113	2,208	94,640	100,165	101,200
Europe, East ¹	25,420	25,470	25,350	490,000	580,000	520,000
Bulgaria.....	3,540	3,556	3,555	66,000	75,000	—
Czechoslovakia.....	1,840	1,829	—	52,500	56,000	50,000
Germany, East.....	1,120	1,038	—	38,100	40,000	—
Hungary.....	3,400	3,080	2,036	72,500	71,500	55,000
Poland.....	3,730	3,558	3,640	70,800	85,000	86,000
Romania.....	6,710	7,340	7,200	108,750	136,000	110,000
Yugoslavia.....	—	4,868	4,917	80,000	114,000	90,000
U.S.S.R. (Europe and Asia) ²	111,500	170,000	165,000	1,240,000	1,800,000	2,300,000
Asia¹	127,740	146,620	140,680	1,765,000	1,910,000	1,910,000
China.....	—	—	—	890,000	—	—
India.....	24,456	33,580	29,300	253,950	347,700	290,000
Iran.....	—	—	—	75,100	102,880	99,200
Iraq.....	1,871	—	—	22,210	41,000	27,700
Israel.....	90	150	130	1,000	3,050	2,280
Japan.....	1,766	1,526	1,480	53,322	48,870	47,070
Jordan.....	651	693	500	5,600	8,080	2,400
Korea, South.....	245	357	313	3,350	4,800	4,500
Lebanon.....	165	166	153	1,902	2,000	1,300
Pakistan.....	10,364	11,807	11,815	129,800	142,000	137,000
Syria.....	2,277	2,718	2,446	26,510	36,500	20,650
Turkey.....	13,514	17,878	16,000	213,598	250,000	240,000
Africa¹	16,490	17,520	18,180	185,000	185,000	190,000
Algeria.....	4,267	4,750	4,500	41,508	46,700	42,000
Egypt.....	1,631	1,572	1,479	49,060	53,800	51,900
Morocco ³	3,496	3,239	4,040	35,302	23,295	40,000
Tunisia.....	2,399	3,205	3,170	19,796	18,300	20,000
Union of South Africa ⁴	3,020	3,041	3,189	23,040	28,000	22,630

For footnotes, see end of table.

51.—Estimated Acreages and Production of Wheat Harvested in 1957 and 1958 in Specified Countries, with Average for 1950-54—concluded

Continent and Country	Acreages of Wheat			Production of Wheat		
	Average 1950-54	1957	1958	Average 1950-54	1957	1958
	'000 acres	'000 acres	'000 acres	'000 bu.	'000 bu.	'000 bu.
South America¹	17,910	18,740	20,260	310,000	320,009	335,000
Argentina.....	11,871	10,858	12,954	216,204	213,500	245,000
Brazil.....	1,475	2,850	2,400	18,500	28,700	20,000
Chile.....	1,933	1,995	2,159	37,446	44,600	43,265
Peru.....	410	363	385	5,814	4,140	5,270
Uruguay.....	1,515	1,922	1,657	22,376	22,000	13,200
Oceania	10,832	7,584	10,570	185,870	101,330	221,850
Australia.....	10,716	7,500	10,430	181,150	97,600	215,100
New Zealand.....	116	84	140	4,720	3,730	6,750
World Totals¹	447,100	501,280	501,650	6,980,000	7,660,000	8,705,000

¹ Estimated totals, which in the case of production are rounded to millions, include allowances for any missing data for countries shown and for other producing countries not shown. ² Tentative unofficial production estimates.

³ Excludes data for areas formerly known as Spanish Morocco and Tangier. ⁴ Production on European holdings only.

52.—Estimated Production of Oats and Barley Harvested in 1957 and 1958 in Specified Countries, with Average for 1950-54

NOTE.—Many of the figures for 1957 have been revised since the publication of the 1959 Year Book.

Continent and Country	Oats			Barley		
	Average 1950-54	1957	1958	Average 1950-54	1957	1958
	'000 bu.	'000 bu.	'000 bu.	'000 bu.	'000 bu.	'000 bu.
North America¹	1,707,000	1,687,000	1,823,000	519,000	661,000	728,000
Canada.....	417,429	380,599	400,951	228,400	215,993	244,764
Mexico.....	3,759	5,400	6,200	7,554	7,800	8,270
United States.....	1,285,417	1,300,954	1,415,570	283,026	437,170	475,196
Europe¹	1,375,000	1,265,000	1,245,000	775,000	1,040,000	1,035,000
Europe, West ¹	1,020,000	875,000	870,000	561,000	775,000	795,000
Austria.....	24,156	23,440	22,960	13,288	18,000	15,400
Belgium.....	32,462	31,270	30,515	12,344	13,580	14,600
Denmark.....	58,740	54,150	44,780	89,450	117,580	114,180
Finland.....	53,801	48,100	65,000	10,904	15,980	18,670
France.....	242,298	177,700	181,700	89,372	166,500	178,800
Germany, West.....	180,322	153,520	149,600	82,320	115,025	111,300
Greece.....	9,558	12,800	11,600	10,424	11,660	12,250
Ireland.....	38,744	30,100	30,520	8,910	17,870	14,330
Italy.....	37,516	40,075	39,175	13,057	13,600	13,600
Luxembourg.....	2,602	—	—	—	—	—
Netherlands.....	32,210	34,760	30,720	11,048	13,390	14,480
Norway.....	11,726	9,350	8,760	7,350	14,495	15,620
Portugal.....	9,424	8,840	9,880	5,780	5,430	5,840
Spain.....	35,306	36,860	35,760	88,530	83,130	81,620
Sweden.....	58,124	58,380	61,600	14,850	25,580	30,270
Switzerland.....	4,946	3,880	3,170	2,581	3,200	3,215
United Kingdom.....	186,774	150,150	149,660	100,326	137,990	147,930
Europe, East¹	355,000	390,000	375,000	214,000	265,000	240,000
Bulgaria.....	11,000	12,500	—	16,900	19,000	—
Czechoslovakia.....	61,000	62,000	62,000	52,100	62,500	55,800
Germany, East.....	76,600	58,500	—	26,800	35,000	40,000
Hungary.....	11,000	18,000	13,200	29,500	44,000	33,700
Poland.....	148,000	175,000	183,000	50,400	56,350	55,000
Romania.....	26,900	27,000	19,300	19,500	19,200	14,200
Yugoslavia.....	19,420	33,345	17,840	16,600	27,740	21,590
U.S.S.R. (Europe and Asia)²	835,000	800,000	890,000	350,000	400,000	440,000

For footnotes, see end of table, p. 504.

52.—Estimated Production of Oats and Barley Harvested in 1957 and 1958 in Specified Countries, with Average for 1950-54—concluded

Continent and Country	Oats			Barley		
	Average 1950-54	1957	1958	Average 1950-54	1957	1958
	'000 bu.	'000 bu.	'000 bu.	'000 bu.	'000 bu.	'000 bu.
Asia¹	110,000	105,000	100,000	805,000	880,000	820,000
China.....	70,000	—	—	325,000	—	—
Cyprus.....	—	—	—	2,676	3,400	2,700
India.....	—	—	—	118,280	131,900	104,440
Iran.....	—	—	—	36,798	45,930	43,630
Iraq.....	—	—	—	35,270	59,930	43,760
Israel.....	—	—	—	2,880	3,400	2,450
Japan.....	9,948	12,950	13,500	90,439	89,680	86,310
Korea, South.....	—	—	—	27,200	30,000	31,500
Lebanon.....	—	—	—	760	1,080	230
Pakistan.....	—	—	—	6,300	6,070	8,070
Syria.....	535	—	—	12,292	33,070	10,500
Turkey.....	24,958	30,000	20,000	128,380	160,000	130,000
Africa¹	21,000	15,000	15,000	150,000	90,000	140,000
Algeria.....	8,940	6,200	5,500	37,494	26,000	35,825
Egypt.....	—	—	—	4,976	6,000	6,200
Morocco ²	3,978	1,450	1,500	71,220	21,500	58,420
Tunisia.....	1,074	—	—	8,920	8,500	12,950
Union of South Africa.....	5,800	4,700	6,100	2,350	700	1,080
South America¹	67,000	83,000	70,000	63,000	70,000	75,000
Argentina.....	56,284	68,500	58,560	39,320	46,400	48,500
Chile.....	6,800	9,000	8,140	4,316	4,700	5,000
Peru.....	—	—	—	9,980	7,630	8,270
Uruguay.....	2,816	3,600	2,260	1,344	1,425	1,130
Oceania¹	44,560	41,105	91,560	33,739	35,440	67,810
Australia.....	42,252	39,280	90,000	31,351	31,740	65,000
New Zealand.....	2,308	1,825	1,560	2,388	3,700	2,810
World Totals¹	4,160,000	3,995,000	4,235,000	2,695,000	3,175,000	3,305,000

¹ Estimated totals, which are rounded to millions, include allowances for any missing data for countries shown and for other producing countries not shown. ² Tentative unofficial production estimates. ³ Excludes data for areas formerly known as Spanish Morocco and Tangier.

CHAPTER X.—FORESTRY*

CONSPECTUS

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NOTE.—The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Canada's extensive forests have been an invaluable asset to the country and its people since the earliest days of settlement. The productive portion of these forests has poured increasing wealth into the stream of national income, contributing to the economy of the country as the producer of raw materials for industry and as the source of livelihood for hundreds of thousands of persons. At the same time, the existence of widespread forest cover, productive or unproductive in the sense of human utilization, remains essential to the maintenance of the balance of nature—in protecting water-catchment areas and assuring supplies of water, in lowering the temperature, reducing the velocity of the wind and protecting the land against drought and erosion, and in providing shelter for birds and animals.

Section 1.—Forest Regions†

The forests of Canada cover a vast area in the north temperate climatic zone. Wide variations in physiographic, soil and climatic conditions cause marked differences in the character of the forests in different parts of the country; hence eight fairly well defined forest regions may be recognized. These regions, with the relative proportion of the total area of all forest regions occupied by each, are as follows:—

Region	Percentage of Forested Area	Region	Percentage of Forested Area
Boreal.....	82.1	Acadian.....	2.0
Great Lakes-St. Lawrence.....	6.5	Columbia.....	0.8
Subalpine.....	3.7	Deciduous.....	0.4
Montane.....	2.3		
Coast.....	2.2	TOTAL.....	100.0

* Sections of this Chapter that deal with forestry and the federal forestry program were revised in the Forestry Branch, Department of Northern Affairs and National Resources, Ottawa. Provincial forestry programs were prepared by the forestry officials of the respective provincial governments. Sections dealing with forest and allied industries, except as otherwise noted, have been revised in the Forestry Section, Industry and Merchandising Division, Dominion Bureau of Statistics.

† A more detailed discussion of forest regions is given in Bulletin 123, *Forest Regions of Canada*, published by the Forestry Branch of the Department of Northern Affairs and National Resources. Accounts of variations in Canadian physiography and climate are included in a special article on The Climate of Canada, appearing at pp. 23-51 of the 1959 Canada Year Book.

Boreal Forest Region.—This region comprises the greater part of the forested area of Canada, forming a continuous belt from Newfoundland and the Labrador Coast westward to the Rocky Mountains and northwestward to Alaska. The white and the black spruces are characteristic species; other prominent conifers are tamarack which ranges throughout, balsam fir and jack pine in the eastern and central portions, and alpine fir and lodgepole pine in the western and northwestern parts. Although the forests are primarily coniferous, there is a general admixture of broadleaved trees such as the white birches and poplars; these play an important part in the central and south-central portions, particularly in the zone of transition to the prairie. In turn, the proportion of spruce and tamarack rises northward, and with increasingly rigorous climatic conditions the close forest gives way to the open lichen-woodland which finally merges into tundra. In the east there is, along the southern border of the Region, a considerable intermixture of species from the Great Lakes-St. Lawrence Forest such as the white and the red pines, yellow birch, sugar maple, black ash, and eastern white cedar.

Subalpine Forest Region.—This is a coniferous forest found on the mountain uplands in Western Canada. It extends northward to the major divide separating the drainage of the Skeena, Nass and Peace Rivers on the south and to that of the Stikine and Liard Rivers on the north. The characteristic species are Engelmann spruce, alpine fir, and lodgepole pine. There is a close relationship with the Boreal Region, from which the black and the white spruces and aspen intrude. There is also some entry of blue Douglas⁺ fir from the Montane Forest, and of western hemlock, western red cedar, and amabilis fir from the Coast Forest. Other species found are western larch, whitebark pine, and limber pine, and on the coastal mountains yellow cedar and mountain hemlock.

Montane Forest Region.—This Region occupies a large part of the interior uplands of British Columbia, as well as a part of the Kootenay Valley and a small area on the east side of the Rocky Mountains. It is a northern extension of the typical forest of much of the western mountain system in the United States, and comes in contact with the Coast, Columbia and Subalpine Forests. Ponderosa pine is a characteristic species of the southern portions. Blue Douglas fir is found throughout, but more particularly in the central and southern parts; lodgepole pine and aspen are generally present, the latter being particularly well represented in the north-central portions. Engelmann spruce and alpine fir from the Subalpine Region become important constituents in the northern parts, together with white birch. The white spruce, though primarily Boreal in affinity, is also present here. Extensive prairie communities of bunch-grasses and forbs are found in many of the river valleys.

Coast Forest Region.—This is part of the Pacific Coast Forest of North America. Essentially coniferous, it consists principally of western red cedar and western hemlock, with abundant Sitka spruce in the north, and with the addition of Douglas fir in the south. Amabilis fir and yellow cedar occur widely and, together with mountain hemlock and alpine fir, are common towards the timberline. Western white pine is found in the southern parts and western yew is scattered throughout. Broadleaved trees, such as black cottonwood, red alder and broadleaf maple, have a limited distribution in this Region. Arbutus and Garry oak occur in Canada only on the southeast coast of Vancouver Island and the adjacent islands and mainland. These are species whose centres of population lie to the south in the United States.

Columbia Forest Region.—A large part of the Kootenay River Valley, the upper valleys of the Thompson and Fraser Rivers, and the Quesnel Lake area of British Columbia contain a coniferous forest closely resembling that of the Coast Region. Western red

cedar and western hemlock are the characteristic species in this interior "wet belt". Associated trees are the blue Douglas fir, which is of general distribution, and, in the southern parts, western white pine, western larch, grand fir and western yew. Engelmann spruce from the Subalpine Region is important in the upper Fraser Valley and is found to some extent at the upper levels of the forest in the remainder of the Region. At lower elevations in the west and in parts of the Kootenay Valley the forest grades into the Montane Region and, in a few places, into prairie grasslands.

Deciduous Forest Region.—A small portion of the deciduous forest, widespread in the eastern United States, occurs in southwestern Ontario between Lakes Huron, Erie and Ontario. Here, with the broadleaved trees common to the Great Lakes-St. Lawrence Region, such as sugar maple, beech, white elm, basswood, red ash, white oak and butternut, are scattered a number of other broadleaved species which have their northern limits in this locality. Among these are the tulip-tree, cucumber-tree, papaw, red mulberry, Kentucky coffee-tree, redbud, black gum, blue ash, sassafras, mockernut and pignut hickories, and scarlet, black and pin oaks. In addition, black walnut, sycamore and swamp white oak are largely confined to this Region. Conifers are few, and there is only a scattered distribution of white pine, tamarack, red juniper and hemlock.

Great Lakes-St. Lawrence Forest Region.—Along the Great Lakes and the St. Lawrence River valley lies a forest of a very mixed nature, characterized by the white and the red pines, eastern hemlock and yellow birch. With these are associated certain dominant broadleaved species common to the Deciduous Forest Region, such as sugar maple, red maple, red oak, basswood and white elm. Other species with wide range are the eastern white cedar and large-tooth aspen and, to a lesser extent, beech, white oak, butternut and white ash. Boreal species, such as the white and the black spruces, balsam fir, jack pine, poplars and white birch, are intermixed and, in certain central portions as well as in the east, red spruce becomes abundant.

Acadian Forest Region.—Over the greater part of the Maritime Provinces, exclusive of Newfoundland, there is a forest closely related to the Great Lakes-St. Lawrence Region and, to a lesser extent, to the Boreal Region. Red spruce is a characteristic though not exclusive species, and associated with it are balsam fir, yellow birch and sugar maple, with some red pine, white pine and hemlock. Beech was formerly a more important forest constituent than at present, for the beech bark disease has drastically reduced its abundance in Nova Scotia, Prince Edward Island and southern New Brunswick. Other species of wide distribution are the black and the white spruces, red oak, white elm, black ash, red maple, white birch, wire birch and the poplars. Eastern white cedar, though present in New Brunswick, is extremely rare elsewhere, and jack pine is apparently absent from the upper St. John Valley and the western half of Nova Scotia.

Section 2.—Forest Resources

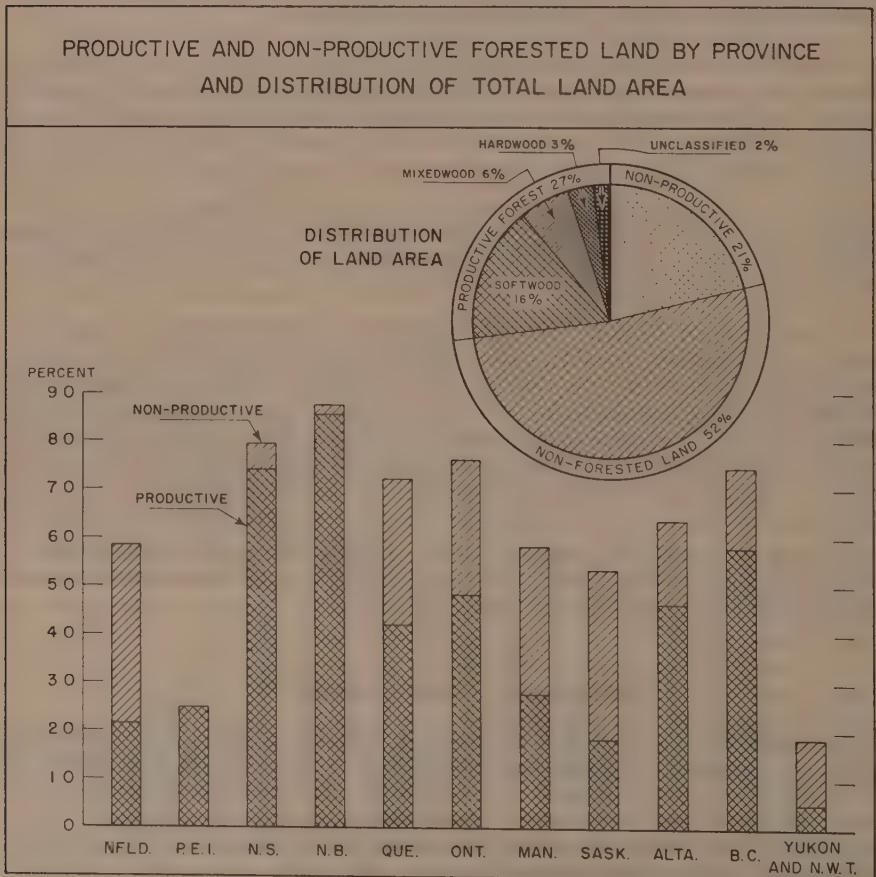
The forested area of Canada is estimated at 1,707,638 sq. miles, and about 56 p.c. of that area is capable of producing merchantable timber. Of this productive area, 714,938 sq. miles are now accessible for commercial operations and the remainder, at present beyond the reach of economical transportation facilities, contains much valuable timber that will be brought progressively into commercial development as demand requires its use and as transportation becomes available. The great areas of forest considered commercially non-productive are nevertheless of significant value to the country in

the influence they exert on climate, moisture and soil. The total forested area of Canada, classified by type of growth and by province, is given in Table 1, p. 20.

There are more than 150 tree species in Canada, of which 31 are conifers, commonly called 'softwoods'. About two-thirds of these softwoods and 10 p.c. of the large number of deciduous or 'hardwood' species are of commercial importance. Approximately 82 p.c. of the volume of merchantable timber is made up of softwood species. The dominant species existing in each forest region are given in Section 1. Detailed information is contained in Forestry Branch Bulletin No. 61, *Native Trees of Canada*,* published by the Department of Northern Affairs and National Resources.

The predominant part played by the lumber and other forest products industries in the development of Canada has resulted in a widespread tendency to evaluate the forests in terms of timber alone. A growing realization of the economic importance of the non-timber values, however, is bringing about increasing recognition of the true value of the forests and is thus developing a broader concept of forestry.

* Obtainable from the Queen's Printer, Ottawa, price \$1.50.



1.—Estimate of Standing Timber, by Type and Size and by Province and Region, 1959

Province and Region	Conifers			Broadleaved			Totals		
	Large Material ¹	Smaller Material ²	Total	Large Material ¹	Smaller Material ²	Total	Large Material ¹	Smaller Material ²	Total
	Million cu. ft.	'000 cords	Million cu. ft.	Million cu. ft.	'000 cords	Million cu. ft.	Million cu. ft.	'000 cords	Million cu. ft.
Accessible									
Newfoundland.....	2,290	128,885	13,244	291	3,613	599	2,581	132,498	13,843
Labrador.....	1,101	68,348	6,485	83	2,185	270	1,184	65,533	6,755
Island.....	1,189	65,537	6,759	208	1,428	529	1,397	66,965	7,088
Prince Edward Island.....	43	668	100	9	455	48	52	1,123	148
Nova Scotia.....	2,149	50,824	6,470	1,529	20,988	3,312	3,678	71,812	9,782
New Brunswick.....	4,299	89,977	11,947	2,652	26,694	4,921	6,951	116,671	16,868
TOTALS, ATLANTIC PROVINCES.....	8,781	270,354	31,761	4,481	51,750	8,880	13,262	322,104	40,641
Quebec.....	6,822	431,976	43,540	2,436	174,673	17,283	9,258	606,649	60,823
Ontario.....	16,785	404,492	51,167	17,633	187,844	33,600	34,418	592,336	84,767
TOTALS, CENTRAL PROVINCES.....	23,607	836,468	94,707	20,069	362,517	50,883	43,676	1,198,985	145,590
Manitoba.....	987	55,529	5,707	919	18,728	2,511	1,906	74,257	8,218
Saskatchewan.....	1,232	58,326	6,189	2,773	57,114	7,628	4,005	115,440	13,817
Alberta.....	12,215	193,805	28,689	12,019	133,440	23,361	24,234	327,245	52,050
TOTALS, PRAIRIE PROVINCES.....	14,434	307,660	40,585	15,711	209,282	33,500	30,145	516,942	74,085
British Columbia.....	244,265	677,755	301,874	13,228	60,283	18,352	257,493	738,038	320,226
Northwest Territories...	400	36,000	3,460	360	18,500	1,932	760	54,500	5,392
Yukon Territory.....	400	25,500	2,567	70	6,300	606	470	31,800	3,173
Totals, Accessible.....	291,887	2,153,737	474,954	53,919	708,632	114,153	345,806	2,862,369	589,107
Totals, Potentially Accessible³.....	51,255	415,441	86,568	2,728	81,951	9,694	53,983	497,392	96,262
Canada.....	343,142	2,569,178	561,522	56,647	790,583	123,847	399,789	3,359,761	685,369

¹ Ten inches D.B.H. and over (suitable for saw timber).

² Four to nine inches D.B.H. (units of 85 cu.

feet).

³ Excludes the volumes on 86,387 sq. miles in Newfoundland and Quebec.

Tenure of Forest Land.—Corporations and private individuals own 9 p.c. of the productive forest land of Canada and 91 p.c. is in the possession of the Crown in the right of the federal or the provincial governments. Rights to cut Crown timber under lease or licence have been granted on 21 p.c. of the productive forest land; the remainder comprises unalienated productive forest areas and small areas of logged lands that have reverted to the Crown.

Woodlots on the 575,000 farms across Canada comprise about 4 p.c. of the total accessible productive forest. These small wooded tracts ranging in size from three or four acres to 200 or more acres are among the most accessible forests in Canada. Further, the woodlots of Eastern Canada are, in general, highly productive because they lie in the southern parts of the country and frequently occupy soils that are considerably higher in quality than those typical of the northern forests.

2.—Tenure of Occupied Productive Forest Land, by Province, 1959

(Net area in sq. miles)

Province or Territory	Provincial Crown Land			Federal Crown Land			Privately Owned Land			Total Occu- pied Pro- duc- tive Forest Land
	Leases and Licences	Permits and Sales	Total	Leases and Licences	Other	Total	Farm Wood- lots	Other	Total	
Newfoundland.....	14,904	—	14,904	—	—	—	58	2,005	2,063	16,967
Labrador.....	8,489	—	8,489	—	—	—	—	—	—	8,489
Island.....	6,415	—	6,415	—	—	—	58	2,005	2,063	8,478
Prince Edward Island....	—	—	—	—	3	3	541	—	541	544
Nova Scotia.....	589	113	702	—	34	34	2,884	8,914	11,798	12,534
New Brunswick.....	10,133	722	10,855	—	414	414	3,100	9,439	12,539	23,808
Quebec.....	62,020	—	62,020	—	227	227	9,172	12,669	21,841	84,088
Ontario.....	82,539	—	82,539	—	1,269	1,269	6,003	10,188	16,191	99,999
Manitoba.....	1,488	1,056	2,544	—	355	355	2,789	1,489	4,278	7,177
Saskatchewan.....	1,362	1,250	2,612	—	592	592	4,463	1,367	5,830	9,034
Alberta.....	6,100	—	6,100	303	26	329	4,436	—	4,436	10,865
British Columbia.....	3,835	2,343	6,178	—	811	811	1,726	8,561	10,287	17,276
Northwest Territories....	—	—	—	11	—	11	—	—	—	11
Yukon Territory.....	—	—	—	16	—	16	—	—	—	16
Canada.....	182,970	5,484	188,454	330	3,731	4,061	35,172	54,632	89,804	282,319

Section 3.—Forest Depletion

General information on forest depletion and increment as well as statistics on forest fires and fire losses are presented in this Section. The scientific control of the influences that account for wastage, such as forest fires, insect pests, etc., is dealt with in Section 4.

The average annual rate and cause of depletion of reserves of merchantable timber during the ten years 1948-57, together with annual data for 1957 and 1958, are given in Table 3. Of the total depletion of the forests in the ten-year period, 92 p.c. was utilized and 8 p.c. was destroyed by fire. (Information on the extent of damage caused by agencies other than fire, such as insects, disease and natural mortality, is not available.) The average annual utilization of 3,164,329,000 cu. feet comprised 47 p.c. logs and bolts, 40 p.c. pulpwood, 11 p.c. fuelwood, and about 2 p.c. miscellaneous products. About 6 p.c. of the total utilization was exported in the form of logs and bolts and pulpwood.

The accessible portion of the productive forests of Canada, covering an area of 714,938 sq. miles, constitutes the reserve from which forest production will be obtained for many years to come. The supply of merchantable timber on this area is estimated at 589,107,000,000 cu. feet and the utilization in 1958 of 3,049,050,000 cu. feet therefore represented 0.5 p.c. of the accessible productive volume. However, it should be noted that utilization does not occur evenly throughout the accessible productive forest area but is concentrated on the relatively small area of occupied forest land (land under lease, licence or private ownership). Thus overcutting may occur on many of these occupied areas, emphasizing the need for orderly management of all commercial forests if the forest industries are to maintain a dominant position in the Canadian economy.

The more efficient utilization of cut timber is an important factor related to forest depletion, for there is little doubt that in the past too high a percentage of the sawn log was discarded. However, changes of great significance have taken place recently in the uses of wood, permitting the utilization of sizes, qualities and species previously considered unmerchantable. The development and manufacture of rayon, cellophane and other products of the cellulose industry have extended the use of wood and the increasing production of plastic-wood products, fibre board and laminated wood has resulted in greater use of inferior grades of wood and species of trees and therefore in the more complete utilization of forest resources and the elimination of much waste.

3.—Average Forest Utilization and Depletion, 1957 and 1958, compared with Ten-Year Average 1948-57

Item	Usable Wood			Depletion		
	Av. 1948-57	1957	1958 ^a	Av. 1948-57	1957	1958 ^a
	M cu. ft.	M cu. ft.	M cu. ft.	p.c.	p.c.	p.c.
Products Utilized—						
Logs and Bolts—						
Domestic use.....	1,463,357	1,547,011	1,771,600 ¹	42.7	47.6	47.7
Exported.....	9,857	6,704	4,700	0.3	0.2	0.1
Pulpwood—						
Domestic use.....	1,085,195	1,119,211	834,200	31.7	34.5	22.4
Exported.....	173,811	153,035	109,300	5.1	4.7	2.9
Fuelwood.....	358,178	285,051	272,000	10.5	8.8	7.3
Other products.....	73,931	61,154	57,250	2.1	1.9	1.6
Total Utilization.....	3,164,329	3,172,166	3,049,050	92.4	97.7	82.0
Wastage—						
By forest fires.....	259,457	74,956	669,400	7.6	2.3	18.0
Total Depletion².....	3,423,786	3,247,122	3,718,450	100.0	100.0	100.0

¹ Including logs for pulping.

² The figure for depletion does not include wastage by agencies other than fire, such as insects, diseases and natural mortality, for which no reliable estimates are available. It represents an average annual depletion of 7 cu. feet per acre on the accessible productive forest area; a much higher rate of depletion occurs on the more accessible occupied productive forest lands.

Forest Fire Statistics.—Forest fires in Canada during 1958 numbered 7,817, as compared with 6,080 during 1957 and an annual average of 5,586 for the 1948-57 period. The area burned in 1958 was 4,939,880 acres, more than double the annual average for the decade. Both value of timber destroyed and cost of fire suppression reached all-time highs. Much of the loss was attributable to exceptionally dry weather during the summer in British Columbia, Alberta and the Yukon, and lightning was responsible for more fires than any other single cause. The percentage of fires caused by lightning increased from 14 in 1957 to 21 in 1958; the percentage of railway-caused fires also increased over 1957 but all other causes either declined or remained the same, on a percentage basis. More than 3,000 additional square miles of forest area were placed under protection during the year.

4.—Forest Fire Losses, 1957 and 1958, compared with Ten-Year Average 1948-57

Item	Average 1948-57	1957	1958
Totals, Fires.....	No. 5,586	6,080	7,817
Fires under 10 acres.....	4,347	4,981	6,429
Fires 10 acres or over.....	1,239	1,099	1,388
Area Burned.....	acres 2,133,880	903,260	4,939,880
Merchantable timber.....	367,155	85,672	733,571
Young growth.....	445,645	80,704	804,879
Cut-over lands.....	211,623	118,541	1,657,436
Non-forested lands.....	1,109,457	618,343	1,743,994
Average Size of Fire.....	acres 382	149	632
Merchantable Timber Burned—			
Large material (10 ft. or over D.B.H.).....	M cu. ft. 81,848	35,142	460,252
Small material (4 ft. to 9 ft. D.B.H.).....	177,609	39,814	209,181
Estimated Values Destroyed¹.....	\$ 5,671,055	1,593,306	14,465,235
Merchantable timber.....	\$ 3,268,077	788,661	7,613,445
Young growth.....	\$ 1,270,682	251,520	5,247,501
Cut-over lands.....	\$ 197,598	116,025	806,593
Other property burned.....	\$ 934,698	442,099	797,696
Actual Cost of Fire Fighting.....	\$ 3,020,954	2,074,517	7,747,510
Totals, Damage and Fire Fighting Costs.....	\$ 8,692,009	3,672,823	22,212,745
Area under protection.....	sq. miles	1,333,170	1,336,954

¹ Figures do not include such values as damage to soil, stream-flow, wildlife, recreation and tourist facilities.

5.—Forest Fire Losses, by Province, 1957 and 1958, compared with Ten-Year Average 1948-57

Item		Annual Average 1948-57	1957	1958
Newfoundland—				
Forest fires.....	No.	187	265	128
Area burned.....	acres	21,661	29,000	2,615
Fire fighting cost and damage.....	\$	111,602	255,000	2,267
Nova Scotia—				
Forest fires.....	No.	279	554	245
Area burned.....	acres	6,704	11,800	1,289
Fire fighting cost and damage.....	\$	61,832	110,000	8,772
New Brunswick—				
Forest fires.....	No.	232	271	140
Area burned.....	acres	8,526	4,700	5,460
Fire fighting cost and damage.....	\$	132,566	41,000	54,689
Quebec—				
Forest fires.....	No.	1,077	863	377
Area burned.....	acres	216,777	71,800	6,893
Fire fighting cost and damage.....	\$	1,534,125	475,000	79,542
Ontario—				
Forest fires.....	No.	1,414	1,641	1,520
Area burned.....	acres	199,720	46,500	36,040
Fire fighting cost and damage.....	\$	2,364,482	1,484,000	1,008,539
Manitoba—				
Forest fires.....	No.	291	341	387
Area burned.....	acres	241,893	156,400	821,543
Fire fighting cost and damage.....	\$	412,441	274,000	876,229
Saskatchewan—				
Forest fires.....	No.	148	159	244
Area burned.....	acres	137,498	47,800	119,260
Fire fighting cost and damage.....	\$	141,674	167,000	345,794
Alberta—				
Forest fires.....	No.	190	179	464
Area burned.....	acres	429,809	15,300	230,993
Fire fighting cost and damage.....	\$	2,336,650	264,000	4,308,852
British Columbia—				
Forest fires.....	No.	1,575	1,539	3,995
Area burned.....	acres	258,149	66,200	2,062,073
Fire fighting cost and damage.....	\$	1,195,272	429,000	13,072,514
Federal Lands—				
Yukon Territory—				
Forest fires.....	No.	47	88	96
Area burned.....	acres	82,493	116,200	1,554,402
Fire fighting cost and damage.....	\$	120,431	71,000	1,692,355
Northwest Territories—				
Forest fires.....	No.	59	42	71
Area burned.....	acres	512,806	334,700	85,293
Fire fighting cost and damage.....	\$	227,027	117,000	606,802
National Parks—				
Forest fires.....	No.	33	29	40
Area burned.....	acres	4,192	1,300	1,404
Fire fighting cost and damage.....	\$	15,709	13,000	9,386
Indian Lands—				
Forest fires.....	No.	51	98	105
Area burned.....	acres	13,647	1,600	12,607
Fire fighting cost and damage.....	\$	37,947	12,000	146,763
Other Federal Lands— ¹				
Forest fires.....	No.	4	11	5
Area burned.....	acres	6	18	8
Fire fighting cost and damage.....	\$	251	1,300	241

¹ Includes military areas.

6.—Forest Fires, by Cause, 1957 and 1958, compared with Ten-Year Average 1948-57

Cause	Average 1948-57		1957		1958	
	No.	p.c.	No.	p.c.	No.	p.c.
Campfires.....	879	16	933	15	970	12
Smokers.....	1,097	20	1,042	17	1,222	15
Settlers.....	570	10	653	11	604	8
Railways.....	711	13	904	15	1,520	20
Lightning.....	1,065	19	874	14	1,620	21
Industrial operations.....	260	4	282	5	339	4
Incendiary.....	142	2	159	3	263	3
Public works.....	104	2	206	3	131	2
Miscellaneous known.....	492	9	694	11	835	11
Unknown.....	266	5	333	6	304	4
Totals.....	5,586	100	6,080	100	7,817	100

Section 4.—Forest Administration, Research and Conservation**Subsection 1.—Federal Forestry Program**

Administration.—The Federal Government is responsible for the protection and administration of the forest resources of the Yukon and Northwest Territories and of other federal lands such as the National Parks, forest experiment stations, military areas and Indian reserves. The Federal Government also administers the Canada Forestry Act which provides, among other things, authority for the operation of forest experiment stations and forest products laboratories.

The Act also authorizes the granting of federal assistance to the provinces to enable them to improve the management of their own forests. Under the Federal-Provincial Agreements signed under authority of the Act, seven of Canada's ten provinces have undertaken a forest inventory with federal financial assistance, and six provinces have reforestation agreements. The history of the Federal-Provincial Agreements and their relation to the Canada Forestry Act is described in a special article appearing in the 1956 Year Book, pp. 459-466. In 1957 the Federal Government broadened the implementation of the Canada Forestry Act by providing financial assistance to the provinces for forest fire protection. A total of \$5,000,000, available over a five-year period, may be applied to capital expenditures, such as the cost of fire protection equipment and improvements, and of forest access roads, trails and buildings required for forest fire protection.

The Forestry Branch of the Department of Northern Affairs and National Resources has been continuing work on the aerial forest mapping of federally administered lands and other territories. For example, forest inventory maps have been prepared from air photographs for portions of the Yukon and Northwest Territories and data have been collected on the ground to support the interpretation of the photographs. The development of instrumental aids in forest photography and in interpretation is being continued by this Branch.

Forestry Research.—In the field of forestry the chief responsibility of the Federal Government is to carry out research in problems affecting the forests of Canada and their development, conservation and more effective utilization. To this end, forest research and forest products research facilities have been expanded greatly throughout the country during the past five years. The Forestry Branch of the Department of Northern Affairs and National Resources conducts research in forest economics, silviculture, forest management, forest ecology, tree physiology, tree breeding, forest soils, forest inventory methods,

forest fire protection, and in forest products. An extensive program of research is under way on the forest experiment stations and on other lands, where an increasing proportion of the research in silviculture and forest management is done in co-operation with provincial forest services and wood-using industries.

Research in the economics of forestry provides the basis for intelligent decisions on the economic aspects of managing forest lands and of utilizing their products and services. It embraces the whole range of economic activities that relate to the use of forest resources, including the fields of consumption, distribution and processing of the products of the forest.

Research in silviculture and management is concentrated mainly in (a) assessing the factors responsible for success or failure in securing natural regeneration following practical cutting methods and different treatments of seed beds, (b) comparing different methods of seeding and planting, and (c) determining the effects of different methods of harvest cutting on the development of residual trees and stands. Studies are made of growth and yield and of successional changes in most of the important forest types. Techniques used in mensuration are constantly under review and study; new methods are tested and developed. Application of silvicultural techniques as well as research in regulation of cut and in methods of protection are aimed at determining how forests may be maintained at the highest levels of production. The relationships between forest growth and site are being studied with a view to the assessment of long-term productivity. The requirements of light and temperature that will produce optimum conditions for growth and development are being determined for the seedlings of many important species of trees. The physiological processes of growth and reproduction are under investigation in a limited number of species. The tree breeding program comprises selecting and developing superior strains and improving techniques for propagating new strains through artificial or controlled pollination. Research in forest soils is directed toward determining the relation of tree growth and nutrition to chemical and physical properties of the soil.

Forest fire protection is a vital problem and is therefore a major concern of federal authorities. In forest fire research the federal Forestry Branch is working toward full co-operation with the provincial forest services in achieving the best methods of forest fire protection. The leading contributions of the Branch have been in the field of fire danger measurement and in the development of equipment and techniques for fire fighting. The more important studies being undertaken at present include development of methods and techniques for classifying fuel types and mapping them, development of methods of rating the severity of fire seasons and of determining the efficiency of fire-protection associations and testing of equipment, such as back-pack tanks and hose, used in fire suppression.

Research in forest inventory methods is of increasing importance because of greatly expanded programs of forest inventories being conducted in most provinces and in the northern territories. Data from air photographs are correlated with field work to develop new techniques of timber estimating, which is being facilitated by the use of stand volume tables. Various methods of field sampling are being investigated and compared. Research is continuing in methods for measuring tree images and tree shadows to determine heights, crown widths, canopy density and other data from photographs taken in different seasons of the year under various conditions. The use of large-scale photography of sample areas is also being investigated and studies are being made in the identification of species and sub-types. Construction of suitable photogrammetric and other scientific apparatus includes equipment required by the forestry tricamera method of air photography which has been developed to provide maximum forestry information at minimum cost, and the shadow height calculator which facilitates the determination of tree heights from shadows in air photographs.

Forest Products Research.—The Forest Products Laboratories of Canada, a Division of the Forestry Branch of the Department of Northern Affairs and National Resources, conducts forest products research in its laboratories at Ottawa and Vancouver. This research is aimed at supplying the basic and practical knowledge required for the best possible utilization of Canada's forest resources and the provision of goods of satisfactory quality to the ultimate consumers. Research includes the determination of the physical, mechanical and chemical properties of wood and their relation to adaptability in use; studies of the factors affecting the quality of wood and of manufactured wood products; determination of the factors that cause wood waste in logging and manufacturing; research and investigation on the preservative treatment and painting of wood and on the use of wood for the manufacture of cellulose, wallboards, alcohols, organic acids, and extractives; studies to determine possible new economic and more valuable uses for woods; and research aimed at determining methods and means for the practical and economical utilization of all wood substance available from the annual timber harvest. Additional work includes the application of laboratory findings to the standardization of lumber grades, development and improvement of engineering designs in wood, and the development of timber specifications for building codes of Canada. By means of numerous technical publications and through other channels, continuous effort is devoted to the widespread dissemination of research results. To assure that research programs are kept abreast of industrial requirements, the Forest Products Laboratories maintain close co-operation with similar organizations in other countries, as well as with the provinces and the forest-based industries generally.

Pulp and Paper Research.—The Pulp and Paper Research Institute of Canada is a corporation supported jointly by the Canadian pulp and paper industry, the Federal Government and McGill University. In its laboratories at Pointe Claire, Que., which were provided by the Federal Government, research is carried out in the whole broad field of pulp and paper processing, from the growth and harvesting of the forests through the various chemical and mechanical manufacturing processes to the properties of end-products, including the improved utilization of both liquid and solid wastes. Further details are given at pp. 523-525.

Forest Biology.—Research on forest insects and diseases is carried out by the Research Branch of the Department of Agriculture which maintains regional laboratories and field stations in all principal forested regions of Canada. The forest insect and disease survey is a Canada-wide project conducted by the Branch in co-operation with the provincial forest services and forest industries, the primary objective of which is to maintain an annual census of forest insect and disease conditions, and to detect and predict the occurrence of outbreaks. Results of the survey are made immediately available to the owners and operators of forest lands for use in planning salvage programs and directing control operations or other measures to reduce damage. An important secondary objective of the survey is extension of knowledge of the insects and fungi affecting forest trees, including their life histories, ranges of distribution and host-parasite relationships.

The research programs of the regional laboratories are designed to lead to comprehensive understanding of the biology and ecology of the more destructive forest insects and fungi, and the causes of fluctuations in abundance or severity of damage in time and place. Problems under intensive study include insect defoliators, leaf diseases, sucking insects, stem cankers, bark- and wood-boring beetles, trunk and root decays, tip- and root-boring insects, and diseases of tree seedlings in forest nurseries. A recent development is the initiation of investigations of virus diseases of forest trees. Laboratory research on development, physiology, nutrition and taxonomy complements the field ecological studies of insects and fungi in the forest environment. Problems of broad national importance in insect pathology, cytology and genetics, bioclimatology and chemical control are investigated by Branch sections which are appropriately staffed and equipped for research in these special fields.

The Research Branch also carries out experiments in control, utilizing cultural techniques, chemicals and biological control agents including parasites, predators and insect pathogens. Technical advisory services are provided in evaluating possibilities of eradication or control, or other applications of research results. Recent examples include recommendations for reduction of seedling losses in forest tree nurseries through cultural techniques and chemical applications; the co-operative organization of cull surveys to improve forest inventories; consultation with local authorities on the Dutch elm disease problem in New Brunswick, Quebec and Ontario, designed to limit spread and damage through control of the disease vectors and sanitation procedures; and technical co-operation with provincial governments and industrial agencies in the organization of spraying operations against the spruce budworm in New Brunswick and Quebec, and the black-headed budworm and ambrosia beetles in British Columbia.

Subsection 2.—Provincial Forestry Programs

All forested land in provincial territory, with the exception of the minor portions in National Parks, forest experiment stations, military areas and Indian reserves (see Table 2, p. 21), is administered by the respective provincial governments. The forestry program of each province is outlined below.

Newfoundland.—Geographically, the Province of Newfoundland has two separate regions—the Island and Labrador on the mainland. The productive forested land of the Island is estimated at 12,758 sq. miles and of Labrador at 17,747 sq. miles, a total of 30,505 sq. miles. Only 578 sq. miles are classified as farm woodlots. Most of Labrador's forests are leased but are as yet virtually untouched.

A large part of the forest land in the interior of the Island is leased, licensed or owned by paper companies, but a three-mile-wide belt along most of the coastline is retained as unoccupied Crown land for the purpose of providing firewood, construction material, fencing material, etc., for the local population. Within this coastal forest belt every household has legal right to cut 2,000 cu. feet of wood a year for domestic use. This form of cutting is generally without any control or restriction but a policy is being introduced whereby cutting in certain 'management areas' is controlled by forest officers.

Commercial timber-cutting on unoccupied Crown lands has been by permit since 1952; permits for amounts up to 120 cords per person are issued by the field staff but permits for larger quantities must be approved by the government. The number of large permits varies from 10 to 25 each year and usually cover stands damaged by wind, fire or insects. Unoccupied Crown land is divided into 21 Forest Inspector Districts averaging 281 sq. miles in size. The Island is also divided into three Forest Regions, each with a Supervisor who is in charge of Inspectors and is responsible to the Deputy Minister of Resources.

The lack of roads into the remote forests makes fire prevention difficult. Twenty-three well-equipped forest fire depots with radiotelephones are scattered along the coast, and 14 lookout towers, also equipped with radiotelephones, cover a large portion of the forested area. One aircraft, equipped with water-dropping tanks, is stationed at Gander throughout the fire season; it patrols isolated forests and transports fire fighting equipment and crews when necessary. A helicopter is also used at times for this purpose. The forest fire staff, including permanent Inspectors, is approximately 110. The two paper companies maintain their own fire protection organizations.

Forest research for Newfoundland is performed by the Forestry Branch of the federal Department of Northern Affairs and National Resources. No reforestation is done in the province.

Prince Edward Island.—The Forestry Division of Prince Edward Island, formed under the Department of Industry and Natural Resources in 1951, became part of the Department of Agriculture in 1955.

Almost all of Prince Edward Island's woodland is privately owned, so that the Forestry Division is concerned mainly with planting, woodlot management and fire protection. A small nursery has been established jointly with the Federal Government to deal with the Island's needs and many people take advantage of seedlings, supplied by this Division at reasonable cost, to re-stock barren areas. The Federal Government pays half the cost of reforesting waste lands.

In proportion to its size, Prince Edward Island exports a great deal of pulpwood. This export, combined with the fuelwood and lumber cut each year, led the Forestry Division to inaugurate a program designed to educate the owner in the proper care and management of his woodlot.

Fire protection does not constitute too great a problem. Wooded areas are scattered in patches throughout the province and, since a network of roads makes all woodlots accessible, equipment can be brought to the scene of a fire quickly and easily.

Research is limited mainly to reforestation problems and these are studied in the provincial nursery.

Nova Scotia.—The area of Nova Scotia, including fresh water, is 21,425 sq. miles, 15,080 sq. miles of which are classed as forested, exclusive of the Cape Breton Highlands National Park and the area northeast of the park. Ninety-seven per cent of the forested land is regarded as productive.

For Canada as a whole, 90 p.c. of the forested land is held by the Crown, but in Nova Scotia only about 22 p.c. is Crown property. These Crown lands are administered by the Department of Lands and Forests through a professional staff of 25 persons. In addition, there are about 15 professional foresters associated with the forest industry in the administration of privately owned lands. The Department of Lands and Forests administers the Small Tree Conservation Act on all lands and is responsible for forest fire suppression on all lands, regardless of land tenure. Forest fire detection is facilitated by 27 observation towers and an aerial patrol service, all integrated with land vehicles and headquarters by radio and telephone communication systems. Well-equipped fire suppression crews and rangers are stationed throughout the province.

The forest industry is of prime importance to the economy of Nova Scotia. There are some 600 sawmills of all sizes, one large newsprint mill and two large pulp mills in operation at present and a new chemical pulp mill is under construction in the Port Hawkesbury-Mulgrave area. These mills, along with the pulpwood export trade, pitprop production, boxwood and barrel production, as well as other facets, use an equivalent of 1,375,000 cords of wood annually.

An active reforestation program has been under way since 1926. Although not as ambitious an undertaking as in some parts of Canada, the program is being expanded in areas where there are less fortunate circumstances relative to natural regeneration. At present there are four producing nurseries with two others under development. Forest management programs include the construction of access roads into Crown land timber areas under the Federal-Provincial Agreement. Timber, pulpwood and Christmas trees are sold through public tender and cutting is under the recommendations of the district foresters of the Department of Lands and Forests. Inventory surveys, regeneration studies, and experimental cuttings are conducted on Crown lands.

Forest research is carried on by Federal Government agencies and the Nova Scotia Research Foundation (see p. 425). Investigations involve stand improvements, cutting methods, and insect and disease activities. Extension projects include an active fire prevention campaign, a motion picture program for schools, distribution of information on forest and wildlife conservation, promotion of the Christmas tree industry, and preparation of articles for general distribution, for newspapers and for magazines.

New Brunswick.—More than 80 p.c. of the area of New Brunswick is classed as productive forest of which the Crown, in right of the province, owns about one-half. About 2 p.c. is owned by the Federal Government and the remainder is privately owned. The report of a provincial forest inventory, part of the national forest inventory, was published in 1958. The productive forest area is estimated at 23,808 sq. miles and the total volume of wood in merchantable sizes at 16,900,000,000 cu. feet; of the latter, coniferous species make up 71 p.c. and deciduous species 29 p.c. The New Brunswick Forest Development Commission in its report submitted in June 1957 indicated that production of forest industries could be doubled in value within two decades and recommended sweeping changes in provincial government policy.

Protection from forest fires, the first requirement for forest conservation, is mainly the responsibility of the Forest Service which also carries out duties in connection with game protection, colonization and the administration of provincial Crown lands. A large-scale aerial spraying program to protect balsam fir and spruce from the spruce budworm has been carried on since 1952 by a Crown company sponsored by the federal and provincial governments and representatives of the forest products industries.

Timber licences issued by the province authorize operators to cut and remove forest products in accordance with forest management plans and cutting permits. Stumpage dues are paid to the province when products are cut by the licensees.

New Brunswick does not maintain a provincial forest research organization. There is, however, extensive co-operation between the province and the federal Forestry Branch in conducting forest research. The University of New Brunswick also has undertaken a small number of forest research projects in co-operation with the National Research Council, the provincial government, and other interested institutions.

Quebec.—The forested lands of the Province of Quebec cover an area of 378,013 sq. miles extending from its southern borders to latitude 52° north, between the frontier of Labrador in the east, and the Eastmain River Basin in the west. Of this total, 84,088 sq. miles are classed as occupied productive forest land, 21,841 sq. miles of it privately owned, 227 sq. miles federal Crown forests and the remainder provincial Crown land on which leases and permits have been granted. Thus, approximately 293,925 sq. miles of the forested lands of Quebec are inaccessible or vacant. About two-fifths of the annual cut in the forests of Quebec comes from privately owned lands.

The limits reserved for forest industries are administered by the Department of Lands and Forests and the technical work such as inventory, reforestation, superintendence of cutting, control of culling, verification of plans for development, collection of stumpage dues, etc., is the responsibility of the Forest Service. These limits are either leased by auction after public notice has been given or assigned under a special law. The price of the licence is fixed by auction or by Order in Council subsequent to specific legislation. The government reserves the right to dispose of the water powers situated on the limits leased.

A tree-felling permit, which is valid for one year, is renewable if the holder has complied with the conditions imposed; it may be transferred with the authorization of the Minister of Lands and Forests. The lessee of a limit must pay a ground rent in addition to the price of licence and must forward, three months before the cutting begins, a plan of the operations. Wood cut must be measured by a licensed culler and at the end of the operations the limit-holder must produce a sworn statement of quantities cut.

The Forest Service endeavours to promote the use of silvicultural methods among the owners of farm woodlots and small forest areas.

Quebec's forest protective system comprises three organizations: the Protective Service, the protective associations and the non-affiliated lease holders or owners. The Protective Service is a government body established within the Department of Lands and Forests in 1924 to enforce legislation and regulations governing forest fire protection and to protect vacant Crown lands, township reserves and colonization territories. The

protective associations, of which there are six, are syndicates of lease holders and owners who have availed themselves of their right to form an association to satisfy the law which compels them to protect their limits or private forests of 2,000 acres or over. Members assume operating expenses in proportion to the area owned by each but the Department assumes half the costs of fire fighting incurred by the associations. The third group is composed of lease holders and of owners who prefer to discharge their obligations personally as far as forest protection is concerned. They enjoy the same privileges and their obligations are the same as those imposed upon the associations.

To perpetuate the forestry program of the province, the Department has established a number of nurseries, the first at Berthierville in 1908. This nursery has three sections: one wooded with a variety of valuable species of mature age, one serving agricultural purposes, and another devoted to forestry experiments and the cultivation of trees for reforestation or ornamentation. More recently, the Grandes Piles nursery and the Gaspé nursery were organized and there are also nurseries in the following counties: Abitibi-East, Témiscamingue, Saguenay, Îles de la Madeleine, Rimouski, Roberval, Rivière du Loup, Témiscouata and Chicoutimi. Their object is the preparation of plants for reforestation nearby districts. 'Floating' nurseries, supervised by the engineers of the Forest Extension Bureau and intended especially for growing reforestation plants for private properties, are located at Pont Rouge, Sherbrooke, Scott, St. Hyacinthe, Victoriaville and Mont Joli. The plants are supplied free of charge on request. A dynamic reforestation program is now under way in the province, with an ultimate objective of 10,000,000 plants yearly on private grounds.

The Bureau of Silviculture and Botany and the Forestry Products Laboratory, both subsidized by the Department, are actively engaged in scientific research work in the forestry field. The Bureau studies the possibilities of utilizing spoil-heaps of gold and asbestos mines, tests the fertility of soils in the spruce groves, classifies forests according to type of vegetation, and studies growth and yields of stands in the timber limits by means of permanent research spots. The Forestry Products Laboratory, located at the Duchesnay Forestry Station, examines developments in the field of chemical conversion of wood and in the use of forestry by-products.

Ontario.—The long-range program of the Ontario Department of Lands and Forests reached an important milestone during the year ended Mar. 31, 1959 when the forest resources inventory, a major undertaking begun in 1946, was completed. In addition, 12,500 sq. miles of forest area were photographed again in the first of the annual revisions which will keep the inventory up to date. From now on, the management of forest resources in Ontario will be based on detailed information across extensive areas. This is the necessary foundation for the Department's ultimate object—a continuous balance between forest growth and forest harvest, providing a high yield of forest products in perpetuity.

The steady decrease in forest fire losses since 1955 (when 396,423 acres were burned over) was climaxed in 1959 with the relatively small total of 5,279 acres burned over. This is the lowest loss in three decades and probably the lowest in Ontario's history. Although bad fire years are not necessarily a thing of the past, the improvement in the fire record of the past few years appears to have conformed with advances in fire control methods. Many of these advances have followed from fire fighting tactics and equipment developed by Department personnel.

Another important factor in the reduction of fire losses is the constant crusade of the Department to inform the public of the need for fire precautions and for conservation of natural resources. The continuous publicity campaign includes newspaper and magazine display advertising, radio and television broadcasts, posters, picture books of the comic type for school children, articles and editorial assistance to publishers and broadcasters, poster contests for school children, and lectures and films presented to school and adult groups. It is believed that this publicity may have helped to reduce the number of forest

fires from 1,558 in 1958 to 1,027 in 1959. In these two years, fires caused by lightning increased from 219 to 242 but, despite a heavier traffic of sportsmen and vacationists in forested areas, man-caused fires decreased from 1,339 to 785.

The Department's air fleet includes six *Otters* and 39 *Beavers*, designed and built to meet the requirements for aircraft capable of carrying substantial loads and of alighting on and taking off from small areas. From the air it is possible to spot fires in their early stages and to deliver men and equipment close to the fire line before the fire has had time to spread. Such rapid containment action has been mainly responsible for reducing the fire loss from an average of 75 acres per fire in the 1949-58 decade to an average of five acres per fire in 1959.

After two years of service, the Department's water-dropping equipment has proved its worth and is being duplicated by fire fighting agencies outside the province. The equipment consists of tanks (mounted on aircraft floats) which scoop up water as the aircraft taxis over a lake and then disperse it over the fire in effective wetting action.

To maintain forest yield and to eliminate wasteful cutting practices, cutting plans for Crown lands must be approved by the Department. Mills are limited to a size proportionate to the amount of raw material that will be steadily available. Integrated operations are required to ensure that no useful part of a felled tree is wasted. A telephone pole, a railway tie, pulpwood and other products may all come from the same tree.

At the end of March 1960, Crown forest areas were divided into 125 management units which covered a total area of 210,919 sq. miles. Of these, 48 were under licence to private companies which are held responsible for management plans over an area of 89,754 sq. miles. The 77 Crown units cover 120,165 sq. miles. By the end of the year, 33 of the licensed companies had submitted plans covering 66,043 sq. miles, and 65 Crown units had prepared plans covering 111,669 sq. miles: a total of 98 management plans covering 177,712 sq. miles. Within the Crown management units, 58 licensees (each covering more than 50 sq. miles) were responsible for management plans over 12,111 sq. miles. By the end of the year, 47 licensees had submitted plans covering 9,021 sq. miles.

During the year ended Mar. 31, 1960, 33,414,110 forest trees were supplied by the Department's nurseries, bringing the cumulative total to well over the 500,000,000-mark. During the year, 16,080,698 trees were planted on Crown lands; 12,986,865 were supplied to owners of private lands; and 4,109,640 were planted in forests belonging to municipalities or conservation authorities and managed by the Minister of the Department. These managed forests now have a total area of 135,964 acres.

As new nurseries come into production, the annual rate of reforestation is expected to increase to 60,000,000 trees. In the more distant future, the quality of trees planted is expected to improve considerably as seed orchards make better seed available. In addition, natural forest growth is being encouraged by improvement of the forest seed bed by scarification, by herbicides sprayed from aircraft to free valuable species from the competition of worthless vegetation and, most significantly, by cutting methods to increase the natural seed supply and promote the survival of seedlings. After several years of experimentation, important new hybrid species are being developed. Inoculations of white pine against blister rust have been successful. Of several pieces of equipment developed by the Mechanical Research Section, special interest was shown in a dusting machine which can be operated in thick bush terrain. Potentially important work is being done in many areas of forestry research conducted at Maple, Port Arthur, Cochrane, Tweed and Dorset.

Manitoba.—The forests of Manitoba are administered by the Forest Service, a Branch of the Department of Mines and Natural Resources. The Service is headed by a Provincial Forester and the province is divided into four Forest Districts—Northern, Southern, Eastern, and Western—each with a District Forester in charge. The Whiteshell

Forest Reserve, which is an important recreational area, is also supervised by a Forester. Each Forest District is subdivided into Forest Ranger Districts of which there are 40, each in charge of a Forest Ranger.

The cutting of mature timber is governed by timber sale, licensed timber berth, pulpwood lease, or timber permit. Timber sales are disposed of by public auction and cover periods of from one to seven years; timber berths cover certain areas granted before 1930, the date of the transfer of the natural resources from the Federal Government to the province; pulpwood leases are granted over an area of 2,748 sq. miles; and timber permits are granted to settlers and small operators at appraised rates for a period of one year or less.

An inventory of the forest resources of the province was completed in 1956 as part of the conservation plan. On the basis of this inventory and other information, working plans with annual allowable cuts on a sustained-yield basis have been brought into operation in the more accessible areas.

Fire protection, also part of the conservation plan, is one of the most important activities of the Forest Service. Fires are detected by air patrol, lookout tower and road patrol and rapid communication is maintained within the Service by radio and telephone. The Air Service transports men and equipment to fires in areas beyond the reach of roads. The main air base is at Lac du Bonnet and summer air bases are maintained at The Pas, Norway House and Thicket Portage. The total area under fire protection is about 97,000 sq. miles.

Regeneration of the forest is mainly dependent on natural means although 4,000,000 trees were planted during the past five years as part of the Federal-Provincial Agreement (see p. 513). The Pineland Forest Nursery is operated at a point near Hadashville to supply planting stock for denuded areas of Crown land and to furnish farmers with shelter-belt and woodlot seedlings.

The province has no forestry research organization but co-operates with several federal services which maintain two research areas.

The Conservation Branch of the Department of Mines and Natural Resources distributes information on all aspects of the Department's resource management programs. A large part of the Branch work, particularly during the summer, is devoted to publicizing the activities of the provincial forest management program. Film and lecture tours are conducted, pamphlets distributed and training and assistance for field staff provided, all with the objective of making the public aware of the great value of the provincial forests and of the need for their wise use and protection.

The Department of Mines and Natural Resources co-operates fully with federal authorities in investigating and controlling forest damage resulting from insects and diseases.

Saskatchewan.—The forests of Saskatchewan, including watered areas, are located mainly in the northern half of the province and cover 147,360 sq. miles or 58 p.c. of the total area of Saskatchewan. Provincial forests constitute approximately 92 p.c. of all forest land in the province and are managed and developed by the Forestry Branch of the Department of Natural Resources.

The Forestry Branch, consisting of six divisions—Administration, Fire Control, Forest Management, Forest Research, Inventory, and Silviculture—is responsible for developing and evaluating forest policies and management programs based on the findings of inventory and research. The responsibility for carrying out such policies and programs is borne by the Regional Administration Branch. For purposes of resource administration the province is divided into five regions—each of which is under the supervision of a regional superintendent. The regions are broken down into conservation officer districts which vary in size according to the resource base and the population to be served. Close liaison is maintained between the Forestry Branch and the Regional Administration Branch.

A major responsibility of the Forestry Branch is the development of techniques in the prevention, detection and suppression of forest fires. A network of 85 lookout towers equipped with two-way radios is maintained throughout the province and supplemented by six aircraft on regular patrol during the high-hazard periods. In 1959 a helicopter was used for the first time on fire detection and suppression work. A group of smoke-jumpers, originally organized in 1947, has been trained to parachute on remote fires. This unit is in constant readiness during the fire season and takes immediate suppression action which is maintained until the smoke-jumpers are relieved by overland crews.

Northern Saskatchewan's communication system, with over 800 radio sets in operation in towers, vehicles, aircraft and woods camps, plays a vital role in the detection and suppression of forest fires. These activities have also been assisted in recent years by the construction of over 2,000 miles of forest access roads.

Alberta.—The 158,529 sq. miles of provincial forest in Alberta are administered by the Forests Division of the Department of Lands and Forests at Edmonton. The Division is composed of five forestry branches under a Director of Forestry: Administration, Forest Protection, Forest Management, Forest Surveys, and Radio.

The Administration Branch supervises all branches, maintaining general control over revenue and expenditure, deals with personnel and conducts a Forestry Training School which offers in-service training for forest officers and other employees.

Protection of the forests is in the charge of the Forest Protection Branch and all field personnel. For ease of administration the forested area has been divided into seven Divisions, each responsible for the forest within its boundary. These Divisions are composed of Ranger Districts in which all activities are supervised by the district forest officer responsible to his divisional superintendent. The divisional staffs include: Forest Superintendent, Assistant Forest Superintendent, Divisional Forester, Chief Ranger, Mechanical Foreman, Chief Check Scaler, Assistant Check Scaler, Divisional Clerk, Assistant Clerk, Radio Operator, Stenographer and seasonal help such as standby fire crews, forest lookout men and general labourers and construction crews. These employees are responsible for fire prevention, detection and suppression and the supervision of logging and milling operations, timber cruising, and construction and maintenance of forestry projects.

The functions of the Forest Management Branch include the approval and acceptance of management and annual operating plans prepared for other Crown lands, proper land use, proper disposal of Crown timber and the direction of field officers in the administration of all contracts related thereto. This extends to all phases, including acceptance of applications, cruising of timber, drawing up of contracts, periodic inspections of areas to assure proper logging and utilization practices, scaling of products cut, collection of dues and the reforestation of areas denuded through cutting, fire, etc.

The Forest Surveys Branch maintains the provincial forest inventory and prepares and maintains detailed inventories by management units; prepares long- and short-term management and protection plans; provides timber application forest type maps; conducts other work pertaining to photogrammetry and forest cover maps; and provides technical drafting and mapping services to other branches of the Alberta Forest Service and the general public.

Development and maintenance of communications is the function of the Radio Branch. Central stations are maintained at Edmonton and Calgary with smaller stations located at divisional headquarters, lookout towers and ranger districts. A number of portable, mobile and airborne stations combine with the fixed stations to form a flexible and comprehensive communications network for both fire detection and suppression operations.

Conservation of 9,000 sq. miles of forest comprising the Rocky Mountains Forest Reserve is administered by a joint provincial-federal agency—the Eastern Rockies Forest Conservation Board with offices at Calgary. The area is composed of three forests which are subdivided into ranger districts. The Superintendent in charge of each forest is

responsible to the administrative officer in Calgary; his decisions are based on policies formed by the Board which comprises one federal and two provincial members. This Reserve includes the headwaters of the main prairie river system.

Research in general is carried out by the Forestry Branch of the federal Department of Northern Affairs and National Resources (which maintains the Kananaskis Experiment Station) and by the Research Branch of the federal Department of Agriculture.

British Columbia.—The productive forest land of British Columbia in 1958 was inventoried at 208,411 sq. miles and in addition there were 59,227 sq. miles of forest land classed as non-productive. Of the productive area, immature timber occurred on 95,739 sq. miles; 84,275 sq. miles carried matured timber with a total volume of 318,000,000,000 cu. feet; 28,397 sq. miles, including areas of recent burn, cut-over or windfall not yet re-stocked, were unclassified.

For administrative purposes, the province is divided into five Forest Districts with regional headquarters at Vancouver, Prince Rupert, Prince George, Kamloops and Nelson. Further decentralization of authority is effected by subdivision of the Forest Districts into Ranger Districts. There are approximately 25 Ranger Districts in each Forest District. Twelve directional, servicing or policy-forming divisions constitute the head office of the Forest Service at Victoria.

Vigorous efforts are being made to bring British Columbia's forest resources under sustained-yield management and the forest industries are making definite progress toward total utilization of their raw materials. The problem is urgent despite the fact that, with a present annual cut of approximately 1,100,000,000 cu. feet, the total inventory would appear sufficient to support present needs in perpetuity. One of the more spectacular results of sustained-yield administration has been to swing a greater proportion of the annual forest harvest to the interior of the province. For many years, the over-cut coast (wet belt) forests have accounted for from 65 p.c. to 80 p.c. of the total forest cut each year. More recently, however, the interior percentage has risen and in 1959 at least 50 p.c. of the total cut originated there. For all practical purposes, the entire interior forest is publicly owned; the great majority of the privately owned, leased or licensed forests are on the coast.

Several systems of timber disposal are in effect. The most publicized is the Tree Farm Licence which constitutes a contract between the government and a company or individual whereby the latter agrees to manage, protect and harvest an area of forest land for the best possible return, in exchange for the right to the timber crop on the area in perpetuity. Provincial Forests, Public Working Circles, and Sustained Yield Units are the governmental equivalent of the Tree Farm Licence with the timber, when it is ready for cutting, being disposed of by public auction. Management, silviculture, road-building and protection on such areas are the responsibility of the Forest Service. Other tenures of lesser importance are Tree Farms, Farm Woodlot Licences, and Timber Sales.

Protection of the forest, particularly from fire, is still a major problem although the public is becoming more cautious. Improved fire fighting techniques, the use of aircraft for patrol and transportation, employment of helicopters, and a gradually expanding system of lookouts were steadily cutting down fire losses until the disastrous 1958 fire season, which was the worst on record. Close liaison with the Research Branch of the federal Department of Agriculture, which maintains laboratories in Vernon and Victoria provides information about insect and fungal enemies of the forest.

Subsection 3.—The Pulp and Paper Research Institute of Canada *

The Pulp and Paper Research Institute of Canada is a centre of research and learning concerned with virtually every aspect of the production and use of pulp and paper products. It was established in 1913 as a branch of the Dominion Forest Products Laboratories

* Prepared by B. W. Burgess, Secretary, Pulp and Paper Research Institute of Canada, Montreal, Que.

and in 1927 was reorganized under the joint sponsorship of the Canadian Pulp and Paper Association, the Federal Government and McGill University. The Institute staff carries out fundamental research and some applied research in the fields of woodlands operations and pulp and paper mill operations. In addition, in co-operation with McGill University, it trains postgraduate students who are working towards master's and doctorate degrees in physical chemistry, wood chemistry, chemical and mechanical engineering, and whose theses subjects lie in fields of interest to the pulp and paper industry.

The Institute has occupied, since 1927, a building on the McGill campus erected by the pulp and paper industry and in 1958 a new building was completed at Pointe Claire on the western outskirts of Montreal by the Government of Canada in lieu of its former annual financial grants. The building houses Institute staff and facilities formerly located in temporary quarters. The Institute's facilities include: organic and physical chemistry, physics, hydraulics and engineering laboratories; pilot plants for chemical pulping, pulp and chip refining and waste liquor pyrolysis; a greenhouse and other facilities for woodlands research; an extensive library; shops and special facilities for pulp and paper testing and for photographic and microscopic (both light and electron) studies of wood, pulp or paper. At present its staff totals about 150.

The Institute's research activities comprise a basic program, contract research, and technical services. The basic program is supported by assessments from the Maintaining Membership (some 40 companies, representing more than 100 mills and about 90 p.c. of the total production of the Canadian industry) and by a basic grant from the Canadian Pulp and Paper Association. It comprises research of interest to the industry broadly, as distinct from that which is the concern only of a single company or of a small segment of the industry.

The projects in the basic program range from studies of the growing seedling in the forest to the converted pulp and paper product, and fall into six broad classifications: woodlands, mechanical pulping, chemical pulping, paper making, process control and waste utilization. The emphasis is primarily on fundamental and exploratory studies. The Institute is regarded as a centre for broad, long-range and uninterrupted studies of basic principles which individual pulp and paper companies would find difficult to justify in terms of immediate applied objectives. Moreover, the Institute is a centre of highly specialized equipment and manpower which individual companies would not normally have.

In addition to its permanent staff, the Institute, in co-operation with McGill University, has some 25 graduate students working on fundamental projects in the background of pulp and paper technology, which also serve as their theses topics. The head of the Institute's Wood Chemistry Division, who is also the E. B. Eddy Professor of Industrial and Cellulose Chemistry at McGill, directs graduate student work on such subjects as the behaviour of the materials of which wood is made—cellulose, lignin, resins, sugars, and other carbohydrates. The head of the Institute's Physical Chemistry Division, also a Research Associate in the McGill Chemistry Department, directs graduate student work in the physical chemistry of fibres, e.g., the forces which cause cellulose fibres in a water suspension to mat together to form paper. The head of the Institute's Chemical Engineering Division, also Associate Professor of Chemical Engineering at McGill, directs graduate students in such chemical and mechanical studies as the friction losses occurring when pulp flows through pipelines. These Division Heads are assisted by other members of the Institute's staff who likewise hold concurrent honorary positions at McGill.

The Institute also undertakes contract research projects on a cost reimbursement basis for individual companies or groups of companies in the pulp and paper or allied fields. The larger of these co-operative contracts have been concerned with problems of particular segments of the Canadian pulp and paper industry, such as the investigation into the causes of corrosion in alkaline pulping equipment, and the recent study of the rapid deterioration of paper machine wires.

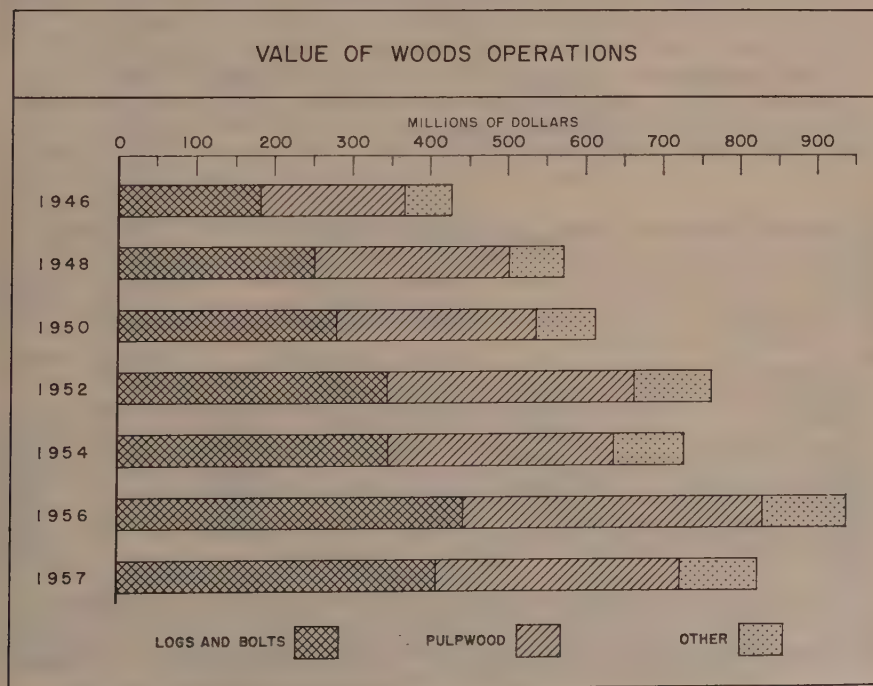
A further function of the Institute is to provide a broad range of technical information services to the industry and, to some extent, to other industries and the public. It maintains a specialized library for this purpose which supplies bibliographies, abstracts, translations, and critical reviews to the scientific staff and the industry.

Section 5.—Forest and Allied Industries

This Section is concerned with the many industries employed in the felling of timber in the forest and its transformation into the numerous utilitarian shapes and forms required in modern living. The basic industries provide the raw material for sawmills, pulp and paper mills and for a wide range of secondary industries that convert the products of the basic industries into more highly manufactured goods such as veneers and plywoods, sash and doors, furniture, and a vast range of industries using wood in any form in their processes. These industries, especially the pulp and paper industry and the lumber industry, contribute substantially to the value of the export trade of Canada and thereby provide the exchange necessary to pay for a large share of the imports purchased from other countries, particularly the United States.

Subsection 1.—Woods Operations

In connection with operations in the woods, the forests provide not only the raw materials for the sawmills, pulp mills, veneer mills, charcoal, excelsior and other plants, but also the logs, pulpwood and bolts for export in the unmanufactured state, and fuel, poles, railway ties, posts and fence rails, mining timber, piling and other primary products that are finished in the woods ready for use or export. A number of minor forest products help swell the total, such as Christmas trees, cascara bark, balsam gum, resin, etc.



Estimates of woods operations attempt to give actual production figures for all items and are based partly on provincial forest service data for volume. Value, as presently estimated, excludes transportation costs, which formed a large part of the consumption values utilized in former calculations.

7.—Value of Woods Operations, by Product, 1953-57

Product	1953	1954	1955	1956	1957
	\$	\$	\$	\$	\$
Logs and bolts.....	331,296,157	345,067,657	393,860,833	443,888,332	409,226,544
Logs for pulping.....	28,748,017	33,359,100	38,985,790	33,581,745	25,827,900
Pulpwood ¹	280,263,133	290,441,378	330,490,498	385,889,223	314,407,202
Fuelwood.....	38,558,073	36,075,799	34,361,586	37,097,923	36,656,139
Poles and piling.....	10,705,142	9,833,897	17,082,451	23,219,870	20,930,794
Round mining timber.....	4,665,279	3,998,158	3,432,932	3,615,647	3,032,954
Fence posts.....	1,821,996	1,590,369	2,071,988	2,286,222	2,644,749
Hewn ties.....	880,604	468,485	627,082	626,481	664,683
Fence rails.....	246,165	243,611	248,359	292,183	326,877
Wood for charcoal.....	361,523	442,381	370,947	487,847	502,170
Miscellaneous roundwood.....	411,788	301,501	408,275	130,445	102,759
Other products.....	6,581,011	6,547,571	7,631,973	8,026,684	8,731,727
Totals.....	704,538,888	728,369,907	829,572,714	939,142,602	823,054,498

¹ Roundwood only; wood residues used for pulping excluded.

8.—Production and Consumption of Wood Cut in Woods Operations 1948-57, and by Product 1957

Year and Product	Production			Consumption		
	Quantity Reported or Estimated	Equivalent Volume of Merchantable Wood ¹	Total Value	Quantity Reported or Estimated	Equivalent Volume of Merchantable Wood ¹	Total Value
		M cu. ft.	\$		M cu. ft.	\$
1948.....	...	3,069,265	579,014,983	...	2,631,388	513,622,093
1949.....	...	2,685,917	491,987,414	...	2,607,465	503,320,008
1950.....	...	3,023,465	613,045,910	...	2,761,909	558,104,116
1951.....	...	3,436,463	821,021,875	...	2,922,883	698,113,030
1952.....	...	3,205,383	763,188,754	...	2,834,719	705,980,443
1953.....	...	3,078,066	704,638,888	...	2,903,661	705,452,273
1954.....	...	3,122,313	728,369,907	...	2,924,832	698,755,990
1955.....	...	3,280,070	829,572,714	...	3,093,255	746,954,072
1956.....	...	3,463,304	939,142,602	...	3,083,626	813,590,871
1957.....	...	3,172,166	823,054,498	...	2,918,522	767,606,567
Logs and bolts..... M ft. b.m.	8,131,080	1,553,715	409,226,544	7,587,579	1,448,073	324,160,681
Logs for pulping..... "	614,950	108,379	25,827,900	"	"	"
Pulpwood..... cord	13,692,557	1,163,867	314,407,202	13,367,088	1,136,202	361,151,710
Fuelwood..... "	3,563,163	285,051	36,056,139	"	284,934	40,170,831
Poles and piling..... No.	1,673,109	25,095	20,930,794	1,534,926	23,024	34,351,644
Round mining timber..... cord	173,389	16,470	3,032,954	97,038	9,219	1,601,127
Fence posts..... No.	9,365,303	11,238	2,644,749	7,263,562	8,716	2,179,069
Hewn ties..... "	384,919	1,924	664,683	384,919	1,925	664,683
Fence rails..... "	2,206,346	2,206	326,877	2,206,346	2,206	326,877
Wood for charcoal..... cord	41,580	3,324	502,170	41,580	3,326	564,540
Miscellaneous roundwood..... cu. ft.	897,000	897	102,759	897,000	897	102,759
Other products ²..... \$	...	...	8,731,727	...	...	2,332,646

¹ In estimating the annual drain on Canada's forest resources, certain converting factors have been used, each of which represents in cubic feet the quantity of merchantable wood used to produce one unit of the material in question. The factor for logs and bolts for the British Columbia coastal region is 175 and for the remainder of Canada 200. Other factors: pulpwood 85, fuelwood and wood for charcoal 80, poles and piling 15, round mining timber 95, hewn railway ties 5, fence posts 1.2 and fence rails 1.

² Converted to rough cords and included with pulpwood.

³ Chiefly Christmas trees but also includes balsam gum, cascara bark, etc.

**9.—Equivalent Volume of Solid Wood Cut and Value of Products of Woods Operations,
by Province, 1955-57**

Province or Territory	Equivalent Volume of Solid Wood			Value of Products ¹		
	1955	1956	1957	1955	1956	1957
	M cu. ft.	M cu. ft.	M cu. ft.	\$	\$	\$
Newfoundland.....	112,392	104,987	97,660	28,049,693	26,666,704	23,731,594
Prince Edward Island..	11,259	10,314	9,065	1,957,548	1,836,683	1,531,244
Nova Scotia.....	118,588	111,202	104,859	24,745,766	24,620,801	22,506,594
New Brunswick.....	202,645	258,562	201,847	45,929,729	63,429,344	46,468,732
Quebec.....	984,111	1,074,032	905,446	249,500,953	288,667,504	231,929,256
Ontario.....	542,031	547,354	565,010	144,476,972	153,272,745	155,355,873
Manitoba.....	56,646	67,215	60,337	9,486,023	13,193,020	10,634,425
Saskatchewan.....	55,225	58,184	55,088	7,496,533	9,280,200	7,967,381
Alberta.....	113,511	114,689	125,938	16,801,055	18,234,424	20,304,609
British Columbia.....	1,080,758	1,109,919	1,042,561	300,614,307	338,671,970	301,797,845
Yukon and N.W.T.....	2,904	6,846	4,355	514,135	1,269,207	826,945
Canada.....	3,280,070	3,463,304	3,172,166	829,572,714	939,142,602	823,054,498

¹ Includes value of forest products other than wood.

Subsection 2.—The Lumber Industry

The manufacture of sawn lumber is the second most important industry in Canada depending on the forest for its raw materials.

The total number of sawmills, tie, shingle, lath, veneer, stave, heading and hoop mills and mills for cutting-up and barking or rossing of pulpwood, reports of which were compiled for 1958, was 5,769 as compared with 6,276 in 1957. Mills sawing less than 15,000 ft. b.m. are excluded but account for less than one-half of one per cent of the total lumber production. Employees numbered 47,763 and wages and salaries amounted to \$142,700,044. Logs, bolts and other materials and supplies of the industry were valued at \$300,342,531, the gross value of production was \$546,299,359 and net value \$236,752,567.

Lumber production in Canada reached its maximum in 1955 at 7,920,033,000 ft. b.m., decreasing to 7,739,603,000 ft. b.m. in 1956 and 7,099,758,000 ft. b.m. in 1957 and amounting to 7,179,080,000 ft. b.m. in 1958. Value of lumber produced in the years 1955 to 1958 decreased from \$541,563,241 in 1955 to \$459,900,750 in 1958.

**10.—Quantity and Value of Lumber Production and Value of All Sawmill Products,
by Province, 1957 and 1958**

Province or Territory	Lumber Production				Value of All Sawmill Products	
	Quantity		Value		1957	1958
	1957	1958	1957	1958	1957	1958
	M ft. b.m.	M ft. b.m.	\$	\$	\$	\$
Newfoundland.....	38,616	28,882	2,354,944	1,731,512	2,682,405	1,897,327
Prince Edward Island...	8,393	7,497	480,152	443,726	563,388	504,601
Nova Scotia.....	255,725	198,521	15,759,031	12,196,570	17,579,418	14,131,372
New Brunswick.....	249,670	236,373	16,795,520	15,472,343	20,330,734	18,118,105
Quebec.....	1,064,217	910,513	74,658,856	63,680,655	88,048,397	76,362,970
Ontario.....	671,551	583,315	54,317,609	46,231,485	67,827,918	58,238,031
Manitoba.....	37,246	39,499	2,022,717	1,991,796	2,298,114	2,204,101
Saskatchewan.....	55,926	64,045	2,735,665	3,358,271	2,905,011	3,598,838
Alberta.....	299,631	254,987	15,576,801	12,657,181	18,042,554	14,684,784
British Columbia.....	4,412,387	4,849,965	281,054,828	301,734,115	335,038,867	356,104,461
Yukon and N.W.T.....	6,396	5,483	471,579	403,096	471,579	454,769
Canada.....	7,099,758	7,179,080	466,227,702	459,900,750	555,688,385	546,299,359

11.—Quantity and Value of Lumber Cut, by Kind, 1956-58

Kind of Wood	Quantity			Value		
	1956	1957	1958	1956	1957	1958
	M ft. b.m.	M ft. b.m.	M ft. b.m.	\$	\$	\$
Spruce.....	2,477,195	2,225,512	2,167,763	153,254,447	131,434,495	123,988,463
Douglas fir.....	2,084,501	1,870,872	2,110,225	147,294,419	122,568,519	131,629,032
Hemlock.....	968,274	984,680	970,194	65,280,039	59,737,169	57,672,413
White pine.....	415,881	386,140	309,727	37,521,903	34,577,543	27,661,653
Cedar.....	507,344	442,674	549,566	46,653,016	35,655,061	45,980,093
Yellow birch.....	175,056	166,746	148,399	16,016,714	15,183,513	13,834,874
Jack pine.....	265,696	222,368	235,558	16,468,100	13,828,905	14,305,745
Maple.....	126,353	125,184	108,032	11,203,381	10,925,643	9,351,296
Balsam fir.....	217,885	242,856	208,106	13,328,451	14,936,079	12,783,474
Red pine.....	52,020	43,645	36,778	4,623,992	3,780,997	3,210,332
Other.....	449,398	389,081	334,732	27,617,165	23,599,778	19,483,375
Totals.....	7,739,603	7,099,758	7,179,080	539,261,627	466,227,702	459,900,750

12.—Quantity and Value of Lumber, Shingles and Lath Produced, 1949-58

NOTE.—Figures from 1908 are given in the corresponding table of previous Year Books beginning with the 1931 edition.

Year	Lumber		Shingles		Lath	
	Quantity	Value	Quantity	Value	Quantity	Value
	M ft. b.m.	\$	squares	\$	'000	\$
1949.....	5,915,443	334,789,873	2,825,261	19,568,633	129,895	1,136,208
1950.....	6,553,898	422,480,700	3,191,589	31,807,753	123,118	1,134,741
1951.....	6,948,697	507,650,241	2,982,362	27,977,418	104,872	1,042,166
1952.....	6,807,594	483,195,323	2,424,818	19,269,747	111,595	1,237,227
1953.....	7,305,958	494,385,993	2,610,068	19,897,877	155,595	1,686,581
1954.....	7,243,855	482,912,005	2,710,654	24,039,162	140,655	1,512,400
1955.....	7,920,033	541,563,241	2,896,080	29,795,687	149,663	1,613,497
1956.....	7,739,603	539,261,627	2,798,599	28,775,812	142,992	1,511,153
1957.....	7,099,758	466,227,702	2,258,452	19,921,267	110,064	1,184,097
1958.....	7,179,080	459,900,750	2,323,583	20,527,166	106,734	1,149,608

Lumber Exports.—Exports of planks, boards and square timber are given in Chapter XXI on Foreign Trade.

Subsection 3.—The Pulp and Paper Industry

The manufacture of pulp and paper has been the leading industry in Canada for many years and the postwar development of the industry has more than kept pace with the vast industrial growth of the nation. Pulp and paper stands first among all industries in net value of shipments, in exports, in total wages paid and in capital invested. It is the largest consumer of electric energy and the largest industrial buyer of goods and services, including transportation, in the land. The industry has a newsprint output about four times that of any other country and provides over 50 p.c. of the world's newsprint needs. Canada is one of the world's greatest woodpulp exporters and stands second only to the United States as a producer of pulp.

There are three classes of mills in the industry. In 1958, 30 were making pulp only, 24 were making paper only and 74 were combined pulp and paper mills.

The industry includes several forms of industrial activity: operations in the woods with pulpwood as a product, the manufacture of pulp and paper of all kinds, and the manufacture of paperboards. Some of the important pulp companies operate sawmills to utilize the larger timber on their limits to the best advantage, and some lumber manufacturers divert a portion of their spruce and balsam logs to pulp mills. Only about 12 p.c. of the pulpwood cut in Canada is exported in raw or unmanufactured form and a large portion of such exports is cut from private lands.

13.—Production, Consumption, Exports and Imports of Pulpwood, 1948-57

NOTE.—Figures in this table are not comparable with those published in the corresponding table of the 1957-58 and previous Year Books.

Year	Total Production of Pulpwood in Canada			Canadian Pulpwood Used in Canadian Pulp Mills		Canadian Pulpwood Exported Unmanufactured		Imported Pulpwood Used in Canada	
	Quantity ¹	Total Value	Average Value per Cord	Quantity ¹	P.C. of Total Production	Quantity ¹	P.C. of Total Production	Quantity ¹	P.C. of Total Consumption
	cords	\$	\$	cords		cords		cords	
1948.....	13,814,970	271,560,306	19.66	10,394,718	83.0	2,352,552	17.0	75,969	0.7
1949 ²	10,308,783	202,544,308	19.65	10,464,990	84.0	1,644,253	16.0	5,491	--
1950.....	13,424,358	280,837,687	20.92	11,406,688	86.7	1,782,134	13.3	28,220	0.2
1951.....	18,151,853	416,196,281	22.93	12,587,792	84.1	2,893,615	15.9	46,634	0.4
1952.....	14,755,089	346,802,085	23.50	11,960,014	82.9	2,529,353	17.1	31,060	0.3
1953.....	13,545,181	309,011,150	22.81	12,060,853	86.8	1,783,657	13.2	48,805	0.4
1954.....	14,739,571	323,800,478	21.97	12,875,978	87.6	1,826,193	12.4	105,030	0.8
1955.....	16,087,951	369,476,288	22.97	13,494,496	88.3	1,882,784	11.7	134,917	1.0
1956 [*]	17,469,334	419,470,968	24.01	13,843,711	79.2	1,953,470	11.2	188,144	1.3
1957.....	14,967,604	340,235,102	22.73	13,187,474	88.1	1,800,411	12.0	179,614	1.2

¹ Given in terms of rough or unpeeled wood.

² Newfoundland included from 1949.

Pulp Production.—The manufacture of pulp, the second stage in this industry, is carried on by mills producing pulp only and also by paper manufacturers operating pulp mills in conjunction with paper mills to provide their own raw material. Such mills usually manufacture a surplus of pulp for sale in Canada or for export. Spruce, supplemented by balsam fir in the east and by hemlock in the west, is the most suitable species for the production of all but the best types of paper.

The preliminary preparation of pulpwood is frequently carried on at the pulp mill but there are also a number of cutting-up and rossing mills operating on an independent basis, chiefly for the purpose of saving freight on material cut at a distance from the mill or on material intended for export. Pulpwood is measured by the cord (4' by 4' by 8' of piled material). One cord of rough pulpwood contains approximately 85 cu. feet of solid wood, and one cord of peeled pulpwood 95 cu. feet.

Of the total 1958 pulp production, 85 p.c. was made in combined pulp and paper mills by companies manufacturing paper. The remainder was made for sale in Canada or for export by mills making pulp only. More than 53 p.c. was groundwood pulp and 15.9 p.c. unbleached sulphite fibre, these being the principal components of newsprint paper. Bleached sulphite, bleached, semi-bleached and unbleached sulphate, soda fibre, semi-chemical, other grades, and groundwood and chemical screenings made up the remainder. A considerable market has developed for screenings in connection with the manufacture of rigid insulating boards.

The manufacture of 10,137,454 tons of pulp produced in 1958 entailed the use of 12,624,165 cords of rough pulpwood valued at \$338,226,407 and the equivalent of 1,243,108 rough cords of other wood (i.e., sawmill chips, slabs and edgings, sawdust, butts, cores, etc.) valued at \$22,300,804. The total value of materials used in the manufacture of pulp was \$436,312,608.

14.—Pulp Production, Mechanical and Chemical, 1949-58

NOTE.—Figures for earlier years will be found in the corresponding table of previous Year Books.

Year	Mechanical Pulp		Chemical Fibre		Total Production ¹	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	\$	tons	\$	tons	\$
1949.....	4,718,806	166,591,741	2,891,418	272,355,430	7,852,998	445,138,494
1950.....	4,910,803	173,035,433	3,314,250	323,330,963	8,473,014	502,583,925
1951.....	5,172,465	213,953,064	3,814,086	503,997,803	9,314,849	727,880,005
1952.....	5,175,319	217,352,245	3,518,127	423,789,033	8,968,009	650,021,180
1953.....	5,122,597	209,899,639	3,663,289	406,114,975	9,077,063	624,865,504
1954.....	5,337,610	214,102,066	4,057,046	433,359,934	9,673,016	655,916,738
1955.....	5,466,925	218,557,773	4,359,226	465,149,732	10,150,547	693,402,831
1956.....	5,723,002	231,236,271	4,645,493	463,880,858	10,733,744	706,232,534
1957.....	5,574,233	227,668,164	4,526,667	468,067,374	10,428,295	706,194,649
1958.....	5,375,499	222,295,717	4,445,310	471,590,838	10,137,454	703,365,594

¹ Includes screenings and unspecified pulps.

15.—Pulp Production, by the Chief Producing Provinces, 1949-58

NOTE.—Figures for earlier years will be found in the corresponding table of previous Year Books.

Year	Quebec		Ontario		Canada ¹	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	\$	tons	\$	tons	\$
1949.....	3,698,401	196,568,691	2,138,444	140,662,434	7,852,998	445,138,494
1950.....	3,922,543	216,299,900	2,297,518	156,390,753	8,473,014	502,583,925
1951.....	4,282,568	298,100,313	2,484,551	219,571,281	9,314,849	727,880,005
1952.....	4,192,047	280,314,341	2,308,722	182,773,000	8,968,009	650,021,180
1953.....	4,163,068	265,937,385	2,323,509	177,713,471	9,077,063	624,865,504
1954.....	4,315,465	268,759,418	2,420,903	183,381,040	9,673,016	655,916,738
1955.....	4,491,139	280,171,743	2,602,298	196,235,632	10,150,547	693,402,831
1956.....	4,809,011	296,884,619	2,735,241	178,012,929	10,733,744	706,232,534
1957.....	4,605,853	286,727,250	2,746,177	207,305,585	10,428,295	706,194,649
1958.....	4,223,227	256,238,044	2,736,456	217,476,915	10,137,454	703,365,594

¹ Includes production in other provinces; Prince Edward Island is now the only province in which there is no production.

Pulp Exports.—The chief market for Canadian pulp is the United States. For many years this market alone has absorbed between 83 and 85 p.c. of such exports.

16.—Exports of Pulp to United Kingdom, United States and All Countries, 1949-58

Year	United Kingdom		United States		All Countries	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	\$	tons	\$	tons	\$
1949.....	181,828	20,137,715	1,305,334	141,641,380	1,557,348	171,504,163
1950.....	117,921	13,128,894	1,694,444	191,005,507	1,846,143	208,555,549
1951.....	217,250	37,770,627	1,831,410	276,760,578	2,243,307	365,132,884
1952.....	210,685	35,208,295	1,588,978	225,082,376	1,940,579	291,863,498
1953.....	214,951	38,099,255	1,599,491	202,247,663	1,950,152	248,674,880
1954.....	270,946	34,486,399	1,669,782	206,435,403	2,180,416	271,418,005
1955.....	280,575	34,814,098	1,868,804	233,796,779	2,366,133	297,304,069
1956.....	244,164	29,762,920	1,919,634	245,080,531	2,374,013	304,536,497
1957.....	225,482	28,662,202	1,847,364	235,258,142	2,282,656	292,406,102
1958.....	216,147	24,660,398	1,832,521	239,874,495	2,219,314	285,448,649

World Pulp Statistics.—Figures of production, exports and imports of pulp for certain countries of the world are shown for 1957 and 1958 in Table 17. It is estimated that these countries produce over three-quarters of the world supply of pulp.

17.—Production, Exports and Imports of Pulp, by Leading Countries, 1957 and 1958

(SOURCE: Canadian Pulp and Paper Association)

Country	1957			1958		
	Production	Exports	Imports	Production	Exports	Imports
	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
Canada ¹	10,397	2,282	65	10,306	2,219	54
United States.....	21,802	630	2,107	21,734	515	2,103
Finland.....	3,371	1,476	—	3,376	1,481	—
Norway.....	1,447	766	24	1,413	744	24
Sweden.....	4,661	2,711	—	4,487	2,598	—

¹ Production figures differ slightly from DBS figures given in Table 14, because of a different basis of calculation.

Paper Production.—During 1958 there were 98 establishments producing paper and paperboard in Canada. In addition to newsprint, Canadian mills have a highly developed production of fine paper, wrapping paper, tissues, paperboard and other cellulose products.

18.—Paper Production, by Type, 1949-58

NOTE.—Figures for earlier years will be found in the corresponding table of previous Year Books.

Year	Newsprint Paper		Book and Writing Paper		Wrapping Paper	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	\$	tons	\$	tons	\$
1949.....	5,187,206	467,976,343	199,317	40,598,820	195,585	30,033,478
1950.....	5,318,988	506,968,207	214,097	47,356,410	222,840	37,778,291
1951.....	5,561,115	564,361,193	253,081	63,790,259	257,332	49,664,005
1952.....	5,707,030	600,515,060	224,683	57,463,621	222,529	45,356,720
1953.....	5,755,471	633,408,019	246,513	61,451,545	238,111	49,028,911
1954.....	6,000,895	657,487,344	269,353	68,613,807	250,408	51,341,374
1955.....	6,196,319	688,338,389	301,352	74,904,349	263,915	53,998,859
1956.....	6,445,110	735,644,049	341,580	86,524,107	288,146	61,098,013
1957.....	6,361,651	729,009,081	355,037	86,990,136	277,208	60,402,276
1958.....	6,030,930	699,906,388	344,622	91,079,353	292,727	64,650,624
	Paperboard		Tissue and Miscellaneous Paper		Totals	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	\$	tons	\$	tons	\$
1949.....	797,023	80,632,075	160,838	22,219,122	6,539,969	641,459,838
1950.....	876,894	92,531,711	179,216	25,521,207	6,812,035	710,153,826
1951.....	960,493	113,469,950	193,250	32,744,242	7,225,271	824,029,649
1952.....	874,582	106,066,622	172,976	28,702,185	7,201,800	838,105,108
1953.....	948,955	114,978,277	187,476	28,991,721	7,376,526	887,858,473
1954.....	940,196	117,172,691	188,755	30,975,427	7,649,607	925,590,643
1955.....	1,027,441	130,365,751	211,186	33,831,919	8,000,213	981,459,247
1956.....	1,173,087	147,967,340	218,862	39,258,846	8,466,785	1,070,492,355
1957.....	1,114,726	143,079,419	211,267	36,890,420	8,299,889	1,056,371,332
1958.....	1,188,650	152,810,753	224,364	36,193,082	8,081,293	1,044,640,200

Quebec produced over 46 p.c. of the total paper made in 1958, Ontario over 29 p.c., British Columbia about 10 p.c. and Nova Scotia, New Brunswick, Manitoba, Saskatchewan, Alberta and Newfoundland the remaining 15 p.c.

19.—Paper Production, by Province, 1957 and 1958

Province	1957		1958	
	Quantity	Value	Quantity	Value
	tons	\$	tons	\$
Quebec.....	3,972,081	493,426,075	3,688,185	467,118,921
Ontario.....	2,337,508	325,850,728	2,355,221	329,282,955
British Columbia.....	741,784	87,913,440	828,864	100,724,925
Nova Scotia, New Brunswick, Manitoba, Saskatchewan, Alberta and Newfoundland.....	1,248,516	149,181,089	1,209,023	147,513,399
Totals.....	8,299,889	1,056,371,332	8,061,293	1,044,640,200

Newsprint Exports.—Total exports of newsprint from Canada in the years 1949-58 are given in Table 20.

20.—Exports of Newsprint to United Kingdom, United States and All Countries, 1949-58

Year	United Kingdom		United States		All Countries	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	\$	tons	\$	tons	\$
1949.....	108,213	9,930,070	4,346,414	395,259,575	4,789,296	440,054,067
1950.....	19,095	1,861,980	4,724,937	463,155,927	4,938,069	485,746,314
1951.....	72,205	7,488,187	4,774,947	496,852,197	5,112,061	536,372,498
1952.....	131,005	14,575,722	4,850,962	534,372,859	5,327,430	591,790,209
1953.....	158,108	18,237,016	4,917,216	564,464,267	5,375,251	619,033,394
1954.....	250,185	28,639,166	4,866,649	558,633,675	5,521,530	635,669,692
1955.....	286,343	33,013,480	5,027,767	578,322,418	5,763,167	665,876,987
1956.....	347,905	41,531,514	5,218,911	615,941,551	5,967,194	708,384,822
1957.....	371,870	44,009,073	5,058,229	610,290,208	5,900,625	715,489,761
1958.....	389,000	46,476,034	4,880,985	590,167,442	5,682,832	690,209,468

World Newsprint Statistics.—Since 1913 Canada has led the world in the export of newsprint. Figures for the leading producing countries for the two latest years available are given in Table 21; 1939 figures are included for comparative purposes. The six countries listed accounted for 73 p.c. of the estimated world production in 1958, Canada contributing about 45 p.c.

21.—Estimated World Newsprint Production and Exports, by Leading Countries, 1939, 1957 and 1958

(Source: Newsprint Association of Canada)

Country	Production			Exports		
	1939	1957	1958	1939	1957	1958
	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
Canada¹.....	3,175	6,397	6,096	2,935	5,907	5,609
United States.....	939	1,826	1,758	13	118	85
United Kingdom.....	848	732	703	42	136	117
Finland.....	550	686	695	433	603	633
Sweden.....	306	476	498	199	297	306
Norway.....	222	200	205	188	165	161

¹ Figures differ slightly from DBS figures given in Tables 18 and 20, because of different bases of calculation.

Statistics of the Combined Pulp and Paper Industries.*—The manufacture of pulp, the manufacture of paper and the manufacture of products made of paper may, under certain conditions, be treated as three industries for they are frequently carried on in separate plants by entirely independent companies. The manufacture of basic stock and the converting of this paper into stationery and other highly processed paper products are often combined in one plant. This conversion of paper within the pulp and paper industry represents only a small part of Canada's production of converted paper and boards, the bulk of which is still made in special converting mills classified in other industrial groups.

The presence of these different combinations in one mill makes it difficult to separate many of the statistics relating to the manufacture of pulp, basic paper and converted paper products. All converting operations carried on in paper mills in this industry are attributed to the particular industrial group of converting plants to which they properly belong. Including manufacturing operations as far as the basic paper-making stage, there were altogether 128 mills in operation in 1958. The employees numbered 64,084 and their salaries and wages amounted to \$307,415,615, as against \$307,627,849 in the previous year. If the pulp made for their own use in combined pulp and paper mills is disregarded, the total value of materials and supplies used in the industry as a whole amounted to \$597,804,877 in 1958 compared with \$617,175,797 in 1957; the selling value of factory shipments to \$1,394,679,180 in 1958 and \$1,411,934,462 in 1957; and value added by manufacture to \$702,950,789 in 1958 and \$693,475,562 in 1957.

The pulp and paper industry is one of the leading single manufacturing industries in Canada. For a number of years it has been first in selling value of factory shipments, in value added by manufacture, in employment and in salaries and wages paid. The manufacturing stages only of the industry are considered in these comparisons, no allowance being made for capital invested, men employed, wages paid or primary products sold in connection with the woods operations. These form an important part of the industry as a whole but cannot be separated from woods operations carried on in connection with sawmills and other industries. In world trade, pulp and paper are generally Canada's main commodities—newsprint alone, over a considerable period, has brought Canada more export dollars than wheat, nickel or any other single commodity.† The United States market absorbs annually over 80 p.c. of all pulpwood exports and over 80 p.c. of the pulp and the paper shipments of Canada.

Subsection 4.—The Veneer and Plywood Industries‡

The production of hardwood veneer and plywood in Canada is confined largely to the eastern provinces. Changes in manufacturing methods applied to hardwood plywood resulted in its adaptation to many uses, particularly to wall finishes for homes and other buildings.

Softwood veneer and plywood are produced almost entirely in British Columbia. Douglas fir is most commonly utilized because of the availability of large diameter logs of this species from which large sheets of clear veneer can be obtained. The use of synthetic resin adhesives is responsible for this product that has become almost indispensable to the construction industry—for wall panels, concrete forms, roofing, sheeting and house sub-floors; for construction of silos, cribs and caissons; for box-car linings, bus bodies, trailers, power-driven and other types of watercraft; for box panels and crate linings, case goods and core-stock for furniture; for plywood-faced doors and for many other items.

The heating of glued veneers in moulds by high-frequency electric fields (dielectric heating) permits the manufacture of shaped plywood which is now being used for furniture, radio cabinets and similar products.

* See Chapter XIV for further particulars regarding the pulp and paper and paper-converting industries.

† For reasons given in Section 1, Part II of the Foreign Trade Chapter, gold is excluded from Canadian trade statistics.

‡ Prepared by the Forest Products Laboratories, Forestry Branch, Department of Northern Affairs and National Resources, Ottawa.

Veneers of Canadian manufacture are not confined to species native to Canada. A number of imported woods of special decorative value are veneered successfully and provide the furniture industry with a wide choice of finishes. Exports of veneer and plywood produced in Canada increased in value from \$969,256 in 1938 to a high of \$30,103,676 in 1955, but declined to \$22,523,609 in 1958.

22.—Veneer and Plywood Produced for Sale, by Type, 1956-58

Type	1956		1957		1958	
	Not over 1/20 Inch	Over 1/20 Inch	Not over 1/20 Inch	Over 1/20 Inch	Not over 1/20 Inch	Over 1/20 Inch
Veneer..... M sq. ft.	596,638	936,986	524,127	500,755	591,444	522,463
\$	14,952,955	9,559,268	13,529,436	4,622,407	15,041,689	5,411,859
Domestic softwood.... M sq. ft.	1,851	873,688	6,240	432,605	7,234	457,051
\$	48,890	7,752,567	71,857	2,977,350	93,830	3,546,471
Domestic hardwood.... M sq. ft.	560,914	62,940	488,830	67,311	556,096	63,670
\$	13,705,076	1,797,285	12,274,087	1,615,194	13,939,251	1,794,998
Imported wood..... M sq. ft.	33,873	358	29,057	839	28,114	1,742
\$	1,198,989	9,416	1,183,492	29,863	1,008,608	70,390
Plywood (1/4 Inch Basis) M sq. ft.	1,304,630		1,257,962		1,532,177	
\$	98,192,320		89,959,610		95,763,254	
Domestic softwood.... M sq. ft.	1,083,659		1,031,386		1,276,766	
\$	69,764,496		65,017,348		70,389,579	
Domestic hardwood.... M sq. ft.	207,576		214,265		243,636	
\$	24,869,773		22,116,570		22,517,968	
Imported wood..... M sq. ft.	13,395		12,311		11,775	
\$	3,558,061		2,825,692		2,855,707	

Subsection 5.—The Wood-Using Industries

The wood-using group comprises thirteen industries,* other than sawmills and pulp mills, using wood as their principal raw material. Most of these industries obtain from the sawmills the wood they transform into planed and matched lumber, boxes, barrels, furniture, caskets and other manufactured or semi-manufactured products but the veneer and plywood and excelsior industries usually manufacture their products direct from logs and bolts.

This wood-using group does not include every industry into which wood enters as a raw material but only those producing commodities where the chief component is wood. There are a number of industrial groups in which wood is an important raw material as in the manufacture of agricultural implements, musical instruments, etc., and others such as the manufacture of machinery in which wood is necessary but only in comparatively small proportion.

Wood is used indirectly in the manufacture of all-metal products such as wooden patterns and wooden foundry boxes in making metal castings. Wood in the form of barrels, boxes and other containers also enters into the distribution of commodities of all kinds.

In 1958 the wood-using group, comprising 4,079 establishments, gave employment to 73,159 persons and paid out \$226,881,505 in salaries and wages. The gross value of its products was \$797,294,220 and the net value \$338,124,109.

* Furniture; sash, door and planing mills; veneer and plywood; hardwood flooring; boxes, baskets and crates; wood-turning; coffins and caskets; cooperage; woodenware; lasts, trees and wooden shoe findings; beekeepers' and poultrymen's supplies; excelsior; and other wood-using industries.

The importance of secondary industry in providing employment will be appreciated when it is noted that the number of employees in the wood-using group was more than 73,000, as compared with sawmills with 47,763 employees and pulp and paper mills with 64,084 in 1958.

23.—Wood Used by Wood-Using Industries, 1955-58

Item	1955	1956	1957	1958
Sawn lumber.....M ft. b.m. \$	2,400,525 171,369,570	2,468,620 180,238,737	2,238,659 160,772,141	2,144,037 155,870,255
Sawlogs, veneer logs, fitches, butts and crotches.....M ft. b.m. \$	480,705 39,979,594	540,055 48,526,195	501,914 ^a 44,223,163	525,720 43,422,674
Veneers and plywoods.....\$	30,074,481	36,717,541	34,703,630	35,303,469
Other wood used.....\$	6,387,141	8,011,668	6,924,556	7,167,332
Totals.....\$	247,810,786	273,494,141	246,623,490	241,763,730

Subsection 6.—The Paper-Using Industries

The paper-using group comprises three industries* engaged primarily in manufacturing commodities of paper and paperboard. Establishments engaged in printing, publishing, bookbinding and the allied graphic arts also consume large quantities of these materials but under the standard industrial classification adopted by the Dominion Bureau of Statistics in 1948 they are grouped separately.

Some paper-using establishments purchase paper as a raw material from the pulp and paper industry and merely subject it to some form of treatment to fit it for further manufacture in some other industry. This occurs in the manufacture of coated, sensitized or corrugated paper. Other firms purchase paper and subject it to some treatment to fit it for a definite final use such as in the manufacture of asphalt roofing or waxed wrapping paper. Another large group uses paper and paperboard as a raw material for conversion into paper bags, boxes, envelopes, laminated wallboard and other commodities.

The manufacture of containers and packages of various kinds has grown very rapidly since ways have been found of converting tough and cheap paper stocks into strongly made boxes which are replacing wooden crates and packing cases. Small attractive paper containers for use in the retail trade are growing in favour and constitute an important branch of the paper-using industries.

Composition roofing and sheathing, consisting of paper felt saturated with asphalt or tar and in some cases coated with a mineral surfacing, is being increasingly used as a substitute for metal roofing, wooden shingles and siding materials. Wood-fibre building boards, some of which are produced by lamination in the paper-using industries, are now used extensively in construction, especially for insulating purposes, replacing lumber and wood lath.

The growth of the paper-using industries in Canada since 1923 reflects these developments. In 1923 the 152 establishments in this group employed 6,870 persons, distributed \$7,442,102 in salaries and wages and produced goods valued at \$31,760,948. In 1958 these industries comprised 434 plants, provided employment for 28,851 persons whose earnings totalled \$102,162,620 and produced products worth \$494,781,213.

* Paper boxes and paper bags; roofing paper; miscellaneous paper goods.

Subsection 7.—Printing, Publishing and Allied Industries

The printing trades group is made up of five closely related industries: printing and publishing, comprised of publishers who operate printing plants; printing and bookbinding, including general or commercial printers and bookbinders; lithographing, comprised of plants specializing in that process; engraving, stereotyping and electrotyping, including photo-engraving; and trade composition or typesetting for printers. A sixth industry covering publishers of periodicals who do not print their own publications has been included since 1949. Although strictly speaking these publishers are not manufacturers, they are closely related to the printing trades which produce the plates, cuts, etc., and print newspapers, magazines, directories, yearbooks, almanacs, house organs and other periodicals for them.

In 1958 the manufacturing printing trades employed 66,359 persons whose earnings totalled \$270,873,584. Their output was valued at \$685,987,181 and the raw materials used and services received cost \$213,964,284.

Periodicals valued at \$283,961,775 accounted for 41.4 p.c. of the value of printed matter and other products, daily newspapers alone contributing \$207,584,197. The value of periodicals is made up of \$207,678,610 received from advertising and \$76,283,165 received from subscriptions and sales of publications. In addition, the 1,556 publishers in the sixth industry reported revenues of \$53,344,851 from advertising and \$14,228,206 from sales of publications.

CHAPTER XI.—MINES AND MINERALS

CONSPECTUS

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NOTE.—The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Section 1.—Canada's Mineral Industry 1958-59*

Following the high point of \$2,190,322,392 reached in 1957, the value of mineral production declined slightly in 1958 but in 1959 the industry again assumed a steady rate of expansion and the value for that year reached an estimated \$2,400,000,000, a new record. Increased output of nickel, iron ore, copper, uranium, petroleum and asbestos accounted for most of the 1959 advance; the only significant declines were in gold, lead, tungsten and coal. Production increases occurred in each of the sectors of Canada's mineral industry in 1959, but the metallic minerals accounted for approximately 80 p.c. of the total increase. The metals made up 57 p.c. of the total value of Canada's mineral output, mineral fuels 23 p.c., structural materials 13 p.c. and non-metallics 7 p.c. The relative production values of these groups of minerals have not varied appreciably throughout the past decade, during which time the total value of mineral production rose from the 1949 level of \$900,000,000.

In output values, uranium, nickel, copper, iron ore, gold, zinc, lead and silver, in that order, were the most important metallic minerals in 1959 and accounted for 97 p.c. of the total value of the metal production. Although the outstanding growth rate in uranium output continued into 1959 when an all-time high of \$324,549,609 was reached, the United States Atomic Energy Commission announced late in 1959 that it would not exercise its options for the purchase of Canadian uranium after 1962. This led to a 'stretch-out' production plan for Canadian uranium producers for the period 1960-66. Consequently, the level of uranium production reached in 1959 may not be exceeded for many years. The nickel industry, which suffered a setback in 1958 as a result of a strike that lasted three months, operated at close to capacity in 1959. Producers are carrying

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out considerable research to find new uses and markets for the metal. The copper industry also had a good year following difficulties in 1958 resulting from a world surplus. Price increases accompanied the rise in demand and production was resumed at some mines that had been closed since 1957.

From a resource development point of view, the iron ore industry continued to be one of the most favourable sectors of the Canadian economy. The 1959 shipments of 24,477,004 tons, 55 p.c. higher than those of 1958, seem likely to be doubled by 1965. Mine development under way in Quebec and Labrador will ensure a continuation of the rapid expansion in the industry. The import quotas on lead and zinc imposed by the United States in 1958 require that imports from Canada be reduced by 20 p.c. from the average of the period 1953-57. This restriction, along with lower prices, proved to be a hardship for Canadian producers. However, the price of zinc and the general market outlook improved for this metal in 1959. Gold production declined slightly in quantity in 1959 and the higher premium on the Canadian dollar lowered the domestic price of gold; consequently, the total value of output declined by approximately \$6,000,000. Silver production increased in 1958 and again in 1959.

In recent years asbestos has accounted for about 60 p.c. of the total value of output of the non-metallic group of minerals. Asbestos production in 1959 recovered from the setback experienced in 1958 and this recovery was accompanied by promising property developments in Newfoundland. Crude petroleum, Canada's leading mineral in point of annual value, suffered its first decline in production in 1958 after an unprecedented period of expansion following the Leduc, Alta., oil discovery of 1947. Somewhat improved markets in 1959 placed the crude oil industry again on a rising production trend. Natural gas resource development proceeded rapidly in 1958 and 1959 in anticipation of greatly increased export markets. Coal production continued the steady decline experienced throughout the 1950's. Cement, sand and gravel accounted for about two-thirds of the value of structural materials produced in 1958 and 1959. Unlike most other minerals, which are greatly affected by export market conditions, the structural materials continued to exhibit a growth rate that closely paralleled the expansion of the domestic economy.

The future holds much promise for the development of Canada's mineral wealth. Exploratory work of the past decade has greatly extended the country's mineral resource potential and production. Canada now leads the world in the production of nickel and asbestos and is a very close runner-up in the production of zinc and uranium. This country has a firmly established second place in the production of aluminum, platinum metals, gypsum and bismuth; it is third in the production of cadmium, gold, silver and titanium ores; and fourth in the production of magnesium, molybdenum, iron ore, barite and cobalt. In a world of rapidly growing population and rising standards of living in many regions, mineral demand over the long term can be expected to provide much opportunity for the continuing growth of the Canadian mineral economy, provided that production efficiency is constantly improved and all-important export markets are not unduly restricted.

Subsection 1.—Metals*

Uranium.—The value of uranium production exceeded that of any other metal in 1958 and 1959 as a result of the unprecedented rate of mine development that has characterized this new industry since 1955. Output of uranium oxide soared from 6,636 tons valued at \$136,304,364 in 1957 to 13,403 tons valued at \$279,538,471 in 1958 and to 15,497 tons valued at \$324,549,609 in 1959. However, this is the highest annual output that can be expected for some time.

The net result of the tremendous growth of the industry in the Western World is an over-supply of uranium. In 1959 the United States, the principal market for Canadian uranium, decided not to continue to purchase any from Canada in excess of its commit-

* The figures for 1958 in this Subsection are final but those for 1959, as well as some pertaining to individual companies in both years, are subject to revision.

ments which expire in 1962 and 1963. As a result, arrangements were made to allow Canadian companies to 'stretch out' to the end of 1966 the undelivered portion of the uranium under firm contract. The transfer of uranium sales contracts from one company to another is also permitted. The stretch-out plan was designed to allow the more economic producers to continue production until the late 1960's when it is hoped that the demand for uranium will increase sufficiently to provide adequate market outlets for the world's productive capacity.

Since May 1958, Canadian uranium producers have been allowed to sell any amount of surplus uranium to countries that hold bilateral agreements with Canada for co-operation in the peaceful uses of atomic energy. For all other countries, Canada may sell up to a maximum of 2,500 lb. of surplus uranium but, when this limit is reached for a given country, further sales are not permitted under present arrangements.

Ontario's output of 12,399 tons of uranium oxide (U_3O_8) in 1959 was about 80 p.c. of the Canadian total. Production in the Elliot Lake camp, the leading uranium producer in the world for the second consecutive year, reached an all-time high of 11,420 tons. The Elliot Lake orebodies contain 369,626 tons of uranium oxide which is sufficient for 30 years of operation at the present rate of production. Eleven mines were in operation in this area at the beginning of 1959 but in February the Spanish American mine, owned by Northspan Uranium Mines Limited, was closed. Two of the ten operating mines are owned by Algom Uranium Mines Limited, two by Northspan Uranium Mines Limited and one each by Can-Met Exploration Limited, Consolidated Denison Mines Limited, Milliken Lake Uranium Mines Limited, Pronto Uranium Mines Limited, Stanleigh Uranium Mining Corporation Limited and Stanrock Uranium Mines Limited. These mines produced 74 p.c. of the Canadian total in 1959.

The producing mines in the Bancroft area of Ontario are Bicroft Uranium Mines Limited, Canadian Dyno Mines Limited and Faraday Uranium Mines Limited. A fourth, Greyhawk Uranium Mines Limited, which had been shipping ore on a custom basis to the nearby Faraday treatment plant, was closed down in April 1959. The total ore reserves of the three producers are estimated at between 4,500,000 and 6,000,000 tons grading 0.09 p.c. U_3O_8 . During the latter part of the year production at the three mines was 3,800 tons of ore a day.

All uranium production in Saskatchewan comes from mines in the Beaverlodge Lake area on the north shore of Lake Athabasca. During 1959 six mines and three treatment plants were in operation. Production for the year was about 2,675 tons of uranium oxide valued at \$54,068,000, a slight decrease from that of 1958. The principal producers were Eldorado Mining and Refining Limited, Gunnar Mines Limited and Lorado Uranium Mines Limited. Lorado continued to treat ore on a custom basis from Lake Cinch Mines Limited, Cayzor Athabaska Mines Limited, Rix-Athabasca Mines Limited, the Lorado mine and from about eight smaller mining operations.

Production of uranium oxide in the Northwest Territories in 1959 amounted to 423 tons. Ore in the mine of Eldorado Mining and Refining Limited at Port Radium on Great Bear Lake is nearly exhausted and the mine is expected to close by the end of 1960. In July, Rayrock Uranium Mines Limited suspended operations at its Marian River mine owing to lack of ore.

The reserves of measured, indicated, and inferred uranium ore in Canada as of Nov. 1, 1959 were estimated at 321,000,000 tons grading 0.12 p.c. U_3O_8 , considered to be the largest in the world. Those of the Elliot Lake camp constitute about 94 p.c. of the Canadian total. The Beaverlodge and Bancroft camps each contain about 3 p.c. of the country's reserves.

Nickel.—Canada has long been the leading producer of nickel and in 1959 had 72 p.c. of the Free World production capacity. Canadian production in 1959 amounted to 185,123 tons valued at \$257,173,340, a gain in quantity of 33 p.c. over 1958 and close

to the all-time high of 1957. Other leading Free World producers in terms of production capacity percentage were New Caledonia (13 p.c.), Cuba (12 p.c.) and the United States (3 p.c.). Figures on the nickel production of the Union of Soviet Socialist Republics are not released but it is estimated to be 50,000 to 55,000 tons annually. Canada possesses the world's major nickel sulphide deposits. They have been the main source of the world nickel output for many years though in recent years production from lateritic nickel ores, especially those of Cuba and New Caledonia, has increased. Lateritic nickel deposits are relatively common compared with sulphide deposits and countries such as Cuba, the Dominican Republic, the Philippines and the Dutch East Indies have large reserves. Lateritic ores are treated chemically in contrast with the pyrometallurgical treatment of most Canadian sulphide ores. Production from lateritics can be expected to offer increasing competition to production from Canadian sulphide deposits.

The Canadian nickel industry is dominated by the mining and smelting operations of the Sudbury, Ont., district where the International Nickel Company of Canada Limited and Falconbridge Nickel Mines Limited have their mines and plants. International Nickel has five mines: the Creighton, Frood-Stobie, Garson, Levack and Murray. It has smelters at Copper Cliff and Coniston, the main product being nickel oxide sinter and by-products, copper, cobalt, the platinum metals, gold and silver, selenium, iron ore and sulphur. The sinter is used directly in industry or shipped to the Port Colborne, Ont., refinery where it is reduced, cast into anodes and either electrolytically refined or shipped to the company's Clydach refinery in the United Kingdom for reduction to metal. A newer method of treatment, in partial production, is the direct electrolysis of artificial sulphide anodes. In 1959 International Nickel's production capacity was 165,000 tons of refined nickel. Falconbridge Nickel Mines Limited obtains its ore from its Falconbridge, East and McKim mines in the Falconbridge area and from the Hardy, Longvack and Fecunis mines in the Onaping area. Concentrates are smelted at Falconbridge, producing a nickel-copper matte which is shipped to the company's refinery at Kristiansand, Norway. Falconbridge completed a large expansion program by the end of 1959 which raised its annual production capacity to 31,500 tons of nickel.

Sherritt Gordon Mines Limited has mining operations at Lynn Lake in northern Manitoba and a refinery at Fort Saskatchewan, Alta. The refinery employs a pressurized ammonia leach process and also treats custom ore concentrates shipped from North Rankin Nickel Mines Limited at Rankin Inlet on the west shore of Hudson Bay and from Giant Nickel Mines Limited near Hope, B.C. The Sherritt Gordon refinery has a capacity of 13,750 tons of nickel a year.

The outstanding current development in the Canadian nickel industry is the International Nickel Company's program at Thompson in northern Manitoba. This operation will be in production in 1961 at a rated capacity of 37,500 tons of nickel a year. The town of Thompson will be completely modern, designed for an initial population of 8,000 people and equipped with hospital and schools. The Thompson mine will have an initial daily capacity of 6,000 tons. A concentrator, a smelter and a refinery to produce electrolytic nickel are under construction. Ore reserves have not been released, though an official statement foresees sufficient ore for at least 100 years of production. Other important developments include the reopening of International Nickel's Crean Hill mine and further diamond drilling on the Strathecona deposit owned by Falconbridge. Both of these operations are in the Sudbury area. The Crean Hill mine is being prepared for production and, following the 1959 exploratory work at the Strathecona deposit, mine development work may be undertaken.

The ore reserves in the Sudbury area in 1958 were 264,628,000 tons for the mines of International Nickel and 43,892,750 tons for Falconbridge. Reserves of the Thompson mine in Manitoba are indicated to be approximately 200,000,000 tons, bringing the total for Canada to some 500,000,000 tons. Canada's position as the world's leading producer of nickel is therefore assured for many years to come.

Copper.—Production of copper in Canada reached a record high of 394,893 tons in 1959 valued at \$233,296,375 compared with 345,113 tons valued at \$174,430,930 in 1958. The world over-supply which had developed in 1957 and the first half of 1958 was wiped out by a series of production cuts and strikes in various parts of the world and an increased demand for copper in the United States. The greater demand for copper and the resulting price increases encouraged the reopening of some marginal producers that had suspended operations in 1957 and 1958 and the resumption of full production at other mines.

Copper production in Canada declined in 1958 owing to the strike at the mines of the International Nickel Company of Canada Limited which lasted from September to December, and to the closure of several relatively high-cost mines. International Nickel is Canada's largest producer followed by Hudson Bay Mining and Smelting Company Limited. Since 1958, Gaspé Copper Mines Limited has been the third largest, displacing the Horne mine of Noranda Mines Limited in that position.

Six smelters for the reduction of copper and copper-nickel ores and concentrates are operated in Canada. In the Sudbury area, International Nickel operates smelters at Copper Cliff and Coniston and Falconbridge Nickel Mines Limited produces copper-nickel matte at Falconbridge. Hudson Bay Mining and Smelting smelts concentrates from mines in Manitoba and Saskatchewan in its plant at Flin Flon, Man., and Noranda Mines Limited smelts ore and concentrates from the Horne mine and other mines in Eastern Canada at its smelter in Noranda. Gaspé Copper Mines treats concentrates from the Newfoundland Tilt Cove mine of Maritimes Mining Corporation Limited as well as from its own mine at Murdochville. The 329,239 tons of refined copper produced in 1958 came from Canada's two copper refineries, one operated by International Nickel at Copper Cliff, Ont., and the other by Canadian Copper Refiners Limited, a subsidiary of Noranda Mines Limited, at Montreal East, Que.

Newfoundland's copper production amounted to 14,751 tons in 1958 and to 15,777 tons in 1959. Production was obtained from the Tilt Cove mine and from the Buchans unit of American Smelting and Refining Company. Development and exploration continued at the property of Atlantic Coast Copper Corporation Limited in northeastern Newfoundland where production is planned for 1960.

Copper production in New Brunswick amounted to only 328 tons in 1958 and no production was obtained in 1959. Heath Steele Mines Limited closed its mine near Newcastle early in 1958. Exploration continued in the Newcastle-Bathurst area on a reduced scale and in 1959 the Consolidated Mining and Smelting Company of Canada Limited started shaft-sinking on the Wedge copper prospect.

Quebec produced 136,839 tons of copper in 1959 compared with 131,445 tons in 1958. The relative importance of the principal copper-producing districts is indicated by the 1958 statistics of production: mines in the Noranda-Val d'Or district—69,834 tons; Gaspé Copper Mines Limited at Murdochville in the Gaspé Peninsula—35,266 tons; and mines in the Chibougamau district—23,490 tons. The Noranda-Val d'Or district includes Noranda's Horne mine and the mines of Waite Amulet Mines Limited, Quemont Mining Corporation Limited, Normetal Mining Corporation Limited, Manitou-Barvue Mines Limited and East Sullivan Mines Limited. In the Chibougamau district are the mining operations of Campbell Chibougamau Mines Limited, Opemiska Mines Limited and Merrill Island Mining Corporation Limited. Other producers in Quebec in 1958 included Weedon Pyrite and Copper Corporation Limited—2,124 tons, and Anacon Lead Mines Limited—720 tons. Development work continued at several properties in the Chibougamau district and exploration was directed towards the Mattagami district of northwestern Quebec.

Ontario's copper production in 1959, at 186,747 tons, was about 31 p.c. higher than in 1958. Most of the production comes from nickel-copper mines in the Sudbury district. International Nickel continued production from its five mines in the district but its deliveries of refined copper declined to 105,235 tons in 1958 owing to the strike. In the

same area, Falconbridge Nickel Mines Limited operates six mines and produced 15,448 tons of copper in 1958. In the Manitouwadge area, Geco Mines Limited and Willroy Mines Limited produced steadily in 1958 and 1959. In 1958 Geco produced 30,455 tons of copper and Willroy 3,292 tons. Other Ontario copper producers are Temagami Mining Company Limited, which operates a copper-nickel-cobalt property on the east arm of Lake Temagami, and Nickel Rim Mines Limited with operations at a property in the Sudbury area which, however, were suspended in May 1958.

Copper production in Manitoba and Saskatchewan amounted to 50,111 tons in 1958 and to 48,967 tons in 1959. Saskatchewan's production comes from the portions of Hudson Bay Mining and Smelting Company's deposits that lie within the province, while Manitoba's output comes from that company's mines and from the deposits of Sherritt Gordon mines located in the Lynn Lake area of northern Manitoba. Hudson Bay produced 45,455 tons of copper in 1958 while Sherritt Gordon produced 4,945 tons. Hudson Bay continued development of the Coronation mine in Saskatchewan and the Stall Lake and Chisel Lake mines in Manitoba.

British Columbia's 1959 copper production was slightly higher than the 6,010 tons produced in 1958. Increased production was obtained from several mines that had closed in 1958 and were reopened in 1959. These include operations of the Howe Sound Company at Britannia Beach, the Phoenix Copper Company Limited at Phoenix, and Woodgreen Copper Mines Limited near Greenwood. Exploration was continued at the properties of Bethlehem Copper Company Limited in Highland Valley and Craigmont Mines Limited near Merritt.

North Rankin Nickel Mines Limited produced nickel-copper concentrates in 1958 and 1959 from its mine at Rankin Inlet on the west shore of Hudson Bay, N.W.T., which were shipped to the Sherritt Gordon refinery at Fort Saskatchewan, Alta.

Iron Ore.—Shipments of iron ore by Canadian producers reached an all-time high of 24,477,004 short tons in 1959 compared with the previous record of 22,348,278 short tons in 1956. The 1959 shipments were 55 p.c. greater than in 1958, the values of the 1959 and 1958 shipments being \$186,206,552 and \$126,131,181, respectively.

Imports from the Lake Superior area of the United States into Ontario, which have usually been over 4,000,000 short tons in recent years, were lower in 1958 owing to the general economic recession and an 86-day strike at one of the major Canadian iron and steel producers. Imports in 1959 were also low as a result of the steel strike which closed most United States iron ore mines. To enable Ontario blast furnace plants to operate at a high rate in 1959, a much larger percentage of the iron ore consumed was obtained from Canadian mines, particularly from Labrador-Quebec.

The United States is the principal market for Canadian iron ore. Because of the decline in steel demand there in 1958, exports decreased sharply. In 1959, despite the steel strike, the United States market for iron ore was strong. During the strike about 15 p.c. of the United States steel-making capacity continued to operate and, because no domestic ore was available, Canadian iron ore producers still had a market. The fear of an ore shortage during the 1959-60 winter led to an increase in stockpile facilities at United States ports, which permitted Canadian and other foreign producers to ship large tonnages during the strike.

Exports to Japan and western Europe, which are smaller but important Canadian customers, decreased in 1958. As industrial activity increased, the demand for Canadian iron ore, particularly in western Europe, strengthened towards the end of 1959. During 1958 it became evident that competition from other iron ore exporting nations, particularly Venezuela, will increase as the world enters into a period of relative iron ore abundance.

Iron Ore Company of Canada, with direct-shipping ore deposits astride the Labrador-Quebec border 360 miles north of the port of Sept Îles, Que., is the largest iron ore producer in Canada. This company accounted for about 60 p.c. of all 1959 shipments. Wabana Mines Limited, wholly owned subsidiary of Dominion Steel and Coal Corporation

Limited, produces heavy-media concentrate from its Bell Island, Nfld., operations and accounted for about 10 p.c. of Canadian shipments. About 3 p.c. of all 1959 shipments was in the form of pelletized iron ore concentrate from the Hilton Mines near Shawville, Que.

In Ontario, Steep Rock Iron Mines Limited and Canadian Charleson Limited have their operations based near Atikokan, 140 miles west of Port Arthur. Steep Rock supplies direct-shipping ore and some concentrate and in 1959 accounted for 12 p.c. of Canada's total shipments. Canadian Charleson commenced small-scale production of iron ore concentrate in 1958. Algoma Ore Properties Limited operates mines and a sinter plant near Jamestown in the Michipicoten area and accounted for 9 p.c. of 1959 shipments. Marmoraton Mining Company Limited produces pelletized iron ore concentrate at its plant near Marmora. Lowphos Ore Limited commenced production of iron ore concentrate in 1959 on a small scale near Capreol.

British Columbia accounted for about 4 p.c. of the total Canadian shipments in 1959. Most of the output, in the form of iron ore concentrates, is produced from mines operated by Empire Development Company Limited on Vancouver Island and Texada Mines Limited on Texada Island. Two new producers of iron ore concentrate on Vancouver Island made small shipments in 1959.

Three companies produce iron by-products from the processing of other raw materials. Two of these, namely, the International Nickel Company of Canada Limited (Copper Cliff, Ont.) and Noranda Mines Limited (Cutler, Ont.) treat iron sulphide material and obtain small tonnages of high-grade iron oxide. The third, Quebec Iron and Titanium Corporation, smelts ilmenite at its Sorel plant in Quebec to produce titania slag and pig iron. The ilmenite is mined from deposits at Allard Lake, Que.

The rapid increase in Canadian iron ore production during the past decade is expected to continue. Properties being developed for production will probably result in a doubling of Canada's 1959 shipments by 1965. In the Wabush Lake area of Labrador, 190 miles north of Sept Îles, Iron Ore Company of Canada and Wabush Iron Company Limited have very large deposits under development. They will spend over \$100,000,000 each in the next few years to bring their properties into production, the former in 1962 and the latter in 1965. In Quebec, Quebec Cartier Mining Company will spend up to \$300,000,000 on its project at Lac Jeannine, about 200 miles north of Shelter Bay on the St. Lawrence River. A deep-water harbour at the new town of Port Cartier, another new town near the mine site, a 193-mile connecting railway, a 60,000-hp. power development and a beneficiation plant were all started late in 1958. In Ontario, Caland Ore Company Limited neared the final stages of dredging the east arm of Steep Rock Lake. The mine development is well advanced and production in 1960 is expected to reach 750,000 tons. In British Columbia, the Consolidated Mining and Smelting Company of Canada Limited started the construction of a plant near Kimberley to produce 36,500 tons of pig iron from what was previously classified as iron oxide waste.

In many other parts of Canada a large number of companies continued to explore and evaluate several iron-bearing deposits of promise. Work to date suggests that there are large reserves—especially in Quebec, Newfoundland (Labrador) and Ontario—of concentrating grade iron ore, some of which are likely to be developed as the demand for iron ore increases.

Gold.—Conditions in Canada's gold mining industry had improved in 1958 over 1957. The average Mint price for gold increased to \$33.98 an ounce troy from only \$33.55 in 1957. Production rose to 4,571,347 oz. t. from 4,433,894 oz. t. and the value increased to \$155,334,370 from \$148,757,143. However, the improvement did not continue in 1959 when production amounted to 4,444,845 oz. t. valued at \$149,213,447. The premium on the Canadian dollar in relation to that of the United States rose, resulting in an average Mint price for gold of only \$33.57 in 1959.

The Emergency Gold Mining Assistance Act in 1958 was extended to the end of the calendar year 1960, with a 25-p.c. increase in cost assistance. The Speech from the Throne in January 1960 announced the Government's intention of extending the Act for a further three-year period, at the same rate of assistance. Recent increased cost assistance was largely offset, however, by increases in labour and material costs and by the lower gold price.

Ontario produces 60 p.c. of Canada's total gold output. Estimates show a 1959 total for the province of 2,666,535 oz. t., compared with 2,716,514 oz. t. in 1958. Increases occurred in the Larder Lake, Patricia and Sudbury districts and declines in Porcupine, Kirkland Lake and Thunder Bay. Thirty lode gold mines were operating, the same number as in 1958. Thirteen lode gold mines were in operation in the Porcupine area in 1959, Hollinger Consolidated Gold Mines Limited, McIntyre Porcupine Mines Limited and Dome Mines Limited being the principal producers; output from Hollinger and Dome decreased while that from McIntyre increased. In the Larder Lake district, output from Kerr-Addison Gold Mines Limited, Canada's largest gold producer, reached a new high of 567,305 oz. t. and was 4.5 p.c. more than in 1958. In the Kirkland Lake district, seven mines were in operation in 1959, Wright-Hargreaves Mines Limited, Macassa Mines Limited and Lake Shore Mines Limited being the leading producers; output from the first two was higher and that from Lake Shore lower than in 1958. In the Patricia area, six mines were in operation, the chief producers being Campbell Red Lake Mines Limited, Madsen Red Lake Gold Mines Limited and New Dickenson Mines Limited; production from Campbell Red Lake was higher than in 1958 and sizable increases were recorded by Cochenour Willans Gold Mines Limited, and McKenzie Red Lake Gold Mines Limited. Production from Pickle Crow Gold Mines Limited at Pickle Lake was 23 p.c. lower. In the Thunder Bay district, output from McLeod-Cockshutt Gold Mines Limited increased in 1959 but that from Leitch Gold Mines Limited declined by 11 p.c. Renabie Mines Limited in the Sudbury district recorded a 30-p.c. increase in output.

Quebec produced 985,829 oz. t. of gold valued at \$33,094,280 in 1959 compared with 1,044,846 oz. t. valued at \$35,503,867 in 1958, output in 1959 being 22 p.c. of the Canadian total. Approximately 39 p.c. of Quebec's gold is obtained as a by-product from the large base-metal mines in the province. Twelve lode gold mines were in operation at the end of 1959, the chief producers being Lamaque Gold Mines Limited and Sigma Mines (Quebec) Limited in the Bourlamaque area, both with a lower output than in 1959, and East Malartic Mines Limited in the Malartic area with a higher output. Stadacona Mines (1944) Limited at Rouyn was closed at the end of 1958 and Belleterre Quebec Mines Limited near Ville Marie in February 1959. One new producer, Norlartic Mines Limited in the Malartic area, started shipping ore to the Malartic Gold Fields Limited mill in June 1959. In the Cadillac-Malartic district, outputs from Barnet Mines Limited, Canadian Malartic Gold Mines Limited and Malartic Gold Fields Limited were lower than in 1958. Output from Bevecon Mines Limited in the Bourlamaque-Louvicoourt district was 10 p.c. lower than in 1958. Sullivan Consolidated Mines Limited in this area was reopened in August 1958 after a two-year shutdown and had a full year's production. Elder Mines Limited and its subsidiary Eldrich Mines Limited in the Noranda area recorded declines. In the Chibougamau area the operation of Anacon Lead Mines Limited, which is classed as a lode gold mine even though it produces some copper, was closed for 166 days in 1959 while shaft sinking proceeded.

Gold production in the Northwest Territories in 1959 amounted to 399,176 oz. t. valued at \$13,400,338 compared with 343,838 oz. t. valued at \$11,683,615 in 1958. The output in both years came from four lode gold mines and the increase in production resulted from a 45-p.c. increase from the Giant Yellowknife mines, the largest gold mine in the Territories. Consolidated Discovery Yellowknife Mines Limited, the second largest producer, maintained production at the 1958 level whereas output from the Con and Rycon mines of the Consolidated Mining and Smelting Company of Canada Limited was lower than in 1958. There was an increase in exploration activity in 1959. Taurcanis Mines Limited, some 100 miles northeast of Yellowknife, sank its shaft a further 300 feet

and was developing two new levels. Ruth Gold Mines Limited leased the Ruth property, 57 miles east of Yellowknife, from Consolidated Mining and Smelting Company of Canada Limited and recovered a small amount of gold. Many other gold prospects were being explored in the Yellowknife area.

British Columbia produced 178,749 oz. t. of gold valued at \$6,000,604 in 1959 compared with 210,612 oz. t. valued at \$7,156,596 in 1958. The two largest of the four lode gold mines—Bralorne Mines Limited and Pioneer Gold Mines of B.C. Limited—in the Bridge River area amalgamated during 1959 under the name of Bralorne Pioneer Mines Limited. Bralorne maintained its 1958 level of production but Pioneer's was 29 p.c. lower in 1959. The Cariboo Gold Quartz Mining Company Limited at Wells and its subsidiary, French Mines Limited at Hedley, produced less than in 1958. There was some increase in gold placer activities in the Wells and Atlin area. Camp McKinney Gold Mines Limited reopened a former lode gold producer near Rock Creek, and Bedwell River Gold Mines Limited reopened the old Musketeer mine on Vancouver Island and recovered a small amount of gold.

Placer mining operations accounted for most of the Yukon gold output of 68,396 oz. t. valued at \$2,296,054 in 1959, the remainder being gold recovered as a by-product by United Keno Hill Mines Limited. Output in the Yukon in 1958 was 67,745 oz. t. valued at \$2,301,975.

In the Prairie Provinces, gold production comes from two lode mines in Manitoba where it is recovered as a by-product from the base-metal mines at Flin Flon and Lynn Lake. Some placer gold is also recovered from river gravels near Edmonton. In Manitoba, gold production dropped to 51,711 oz. t. from 87,356 in 1958 and in Saskatchewan to 80,694 oz. t. from 86,590. The decline in Manitoba resulted primarily from the closing of the Nor-Acme mine at Snow Lake in July 1958. This mine was being worked under lease by Britannia Mining and Smelting Company Limited. Output from San Antonio Gold Mines Limited and its subsidiary, Forty-Four Mines Limited at Rice Lake, was lower than in 1958. An internal shaft is being sunk at Forty-Four to develop more ore at depth if possible.

Gold production from the Maritime Provinces amounted to only 50 oz. t. in 1959 and 183 oz. t. in 1958, all of it from Nova Scotia in 1959 and from Nova Scotia and New Brunswick in 1958. In Newfoundland, gold is recovered as a by-product from the base-metal operations of Buchans Mining Company Limited at Buchans and Maritimes Mining Corporation Limited at Tilt Cove. Gold recovered in 1959 increased slightly to 13,518 oz. t. from 13,381 oz. t. in 1958.

The outlook for Canada's gold mining industry is dependent largely upon any improvement that may occur in the cost-price relationship. Faced with a fixed price of \$35 an oz. t., United States currency, and the fluctuating exchange rate on the Canadian dollar in relation to that currency, the industry has depended greatly on the cost-aid provided by the Emergency Gold Mining Assistance Act.

Lead and Zinc.—The growth of the Canadian lead and zinc mining industry was retarded throughout 1958 and 1959 by unsettled prices and by quotas imposed by the United States to hold its imports of lead and zinc to 80 p.c. of the 1953-57 average. In 1958 lead prices fell in June from 12½ cents a pound to 10½ cents and then advanced to 11½ cents in the last quarter of the year. The price of lead in 1959 settled from the high of 11½ cents a pound recorded during the first week in January to 10½ cents by early September at which level it stayed for the remainder of the year. Compared with 1957, production of lead in 1958 increased 2.9 p.c. in volume to 186,680 tons but decreased 17 p.c. in value to \$42,413,805. Production in 1959 amounted to 186,495 tons valued at \$39,574,191.

Exports of lead in 1958 totalled 146,432 tons compared with 129,191 tons in 1957. Of this amount, 54,081 tons were contained in concentrates, almost all of which were shipped to the United States (23,460 tons), Belgium (16,223 tons) and West Germany (13,781 tons). Refined lead exports totalled 92,351 tons, of which the United Kingdom imported 49,841 tons, the United States 40,503 tons and other countries 2,007 tons. According to preliminary export figures, a small decrease in exports occurred in 1959.

The price of prime western zinc was 10 cents a pound from the beginning of 1958 to early October when it was increased to 10½ cents. By the middle of November the price reached 11½ cents a pound where it held for the remainder of the year. Early in January 1959 the price advanced to 11¾ cents a pound and by mid-October, after several declines and advances, it reached 12¾ cents where it stayed for the remainder of the year. Zinc output in 1959 was 394,458 tons valued at \$96,563,324 compared to the 1958 output of 425,099 tons valued at \$92,501,496.

Exports in 1958 of refined zinc and zinc in concentrates totalled 413,531 tons compared to 389,148 tons in 1957. The United States was by far the largest importer, receiving 95,395 tons of refined zinc and 162,849 tons of zinc in concentrates. The United Kingdom was the next largest importer, receiving 83,854 tons of refined zinc. Other important importers were Belgium and Norway which together imported 26,733 tons of zinc in concentrates. Altogether some 17 countries imported zinc from Canada. Compared with 1958, estimated exports of zinc during 1959 indicate a drop of about 10 p.c.

Canadian consumption of all forms of lead in 1958 was 84,646 tons compared with 81,183 tons in 1957. Zinc consumption increased from 54,420 tons in 1957 to 57,542 tons in 1958. Preliminary data for 1959 show that a large increase in zinc consumption occurred but that lead consumption decreased.

British Columbia mines accounted for about 80 p.c. of Canada's lead production and 51 p.c. of the zinc production in 1958-59. The principal producer of both metals is the Consolidated Mining and Smelting Company of Canada Limited (Cominco), operator of the Sullivan mine and 11,000-ton mill at Kimberley, the Bluebell mine and 500-ton mill at Riondel, and the H.B. mine and 1,000-ton mill at Salmo. Concentrates from all of Cominco's mines and those from other mines in British Columbia, Yukon and some foreign areas were treated at the company's smelter at Trail. Other important British Columbia producers of lead and zinc in 1958-59 included: Canadian Exploration Limited and Reeves MacDonald Mines Limited, both near Salmo; Sheep Creek Mines Limited, west of Invermere; and Howe Sound Company Limited, north of Vancouver. Torbrit Silver Mines Limited, north of Prince Rupert, produced lead but no zinc. The company ceased mining and milling in October 1959, however, owing to lack of ore. The Britannia copper-zinc mine operated by Howe Sound was reopened in January 1959 after being closed for nine months.

United Keno Hill Mines Limited was the only important producer of lead and zinc in the Yukon. Commercial production from its Elsa mine commenced in 1958.

In Manitoba and Saskatchewan, Hudson Bay Mining and Smelting Company Limited is the only producer of zinc. Four mines near Flin Flon produce ore for treatment at the Flin Flon concentrator. One of these, the North Star, was closed in March 1958 following the mining out of the orebody. The company's electrolytic zinc plant at Flin Flon operated at close to its rated capacity of 190 tons a day in 1959. No lead is produced in the two provinces.

In Ontario, zinc concentrates and a small amount of lead concentrates were produced by Geco Mines Limited and Willroy Mines Limited in the Manitouwadge district, north of Lake Superior.

The principal sources of zinc concentrates in Quebec in 1958-59 were: the copper-zinc mines in the Noranda-Val d'Or district operated by Quemont Mining Corporation Limited; Manitou-Barvue Mines Limited; Normetal Mining Corporation Limited; and Waite-Amulet Mines Limited. Quebec's main lead producer was New Calumet Mines Limited whose mine is 70 miles west of Ottawa. Manitou-Barvue also produced lead concentrates. The West MacDonald mine in Dufresnay township, operated by West MacDonald Mines Limited, and the Weedon mine, about 40 miles northeast of Sherbrooke, operated by Weedon Mining Corporation Limited, produced some zinc in 1958 but both were closed in 1959.

In the Atlantic Provinces, the Buchans unit of American Smelting and Refining Company Limited in Newfoundland remained the only producer in 1958-59 after Heath Steele Mines Limited ceased operating its mine near Newcastle, N.B., in March 1958.

Exploration and development activities during 1958-59 were centred in the Snow Lake area of Manitoba, 70 miles east of Flin Flon, and in the Watson Lake area of Quebec, 100 miles north of Senneterre. Two properties in the Snow Lake area owned by Hudson Bay Mining and Smelting Company Limited are scheduled for production in 1960. Several large deposits containing mainly zinc and copper values and over 23,000,000 tons of ore have been outlined in the Watson Lake area by diamond drilling.

Silver.—Canada's silver production in 1959 was 32,329,137 oz. t. valued at \$28,381,750 compared with 31,163,470 oz. t. in 1958 valued at \$27,053,007. Practically all of the 1959 increase came from British Columbia and the Yukon, their total production being 1,147,196 oz. t. greater than in 1958. Significant increases in silver recovery from lead-zinc ores in British Columbia and the mining of richer silver ore at the United Keno Hill mines in the Yukon account for most of the greater recovery.

The three leading silver producing countries in 1958 were Mexico (47,000,000 oz. t.), United States (36,800,000 oz. t.) and Canada (31,200,000 oz. t.). Silver consumption in Canada in 1958 declined to 8,600,000 oz. t., 1,100,000 less than in 1957. The arts and industries required 3,900,000 oz. t. and the remainder was used in coinage. Final figures for world consumption of silver in 1959 are not available, but preliminary returns indicate that world demand in the latter part of 1959 was far greater than in corresponding periods of previous years.

Most of Canada's silver output is recovered as a by-product of base-metal ores treated at smelters in Canada and abroad. The principal producer is the Consolidated Mining and Smelting Company of Canada Limited (Cominco) which recovers silver in the refined form from lead-zinc and silver-lead-zinc ores treated at Trail, B.C. Cominco in 1958 produced 12,875,160 oz. t. of silver, equal to about 41 p.c. of the total Canadian production. Other important producers of silver are: the copper refinery in Montreal East, Que., operated by Canadian Copper Refiners Limited; the silver-cobalt refinery at Deloro, Ont., operated by Deloro Smelting and Refining Company Limited; the copper refinery at Copper Cliff, Ont., operated by the International Nickel Company of Canada Limited; and the gold bullion refineries at Timmins and Ottawa, Ont., operated by Hollinger Consolidated Gold Mines Limited and the Royal Canadian Mint, respectively.

United Keno Hill Mines Limited, Canada's largest single source of silver, produced about 7,308,000 oz. t. of the metal in the year ended Sept. 30, 1959—a new record. Production during the corresponding period in 1957-58 was 5,984,373 oz. t. The increase was attributable to the high-grade ore mined from the company's Elsa mine which completed its first full year of commercial production about mid-1959. Other leading silver producing companies were Highland-Bell Limited and Torbrit Silver Mines Limited, both in British Columbia, and Agnico Mines Limited and Siscoe Metals of Ontario Limited, both in Ontario. These four companies in 1958 together produced 5,212,090 oz. t. The Torbrit silver mine was closed in October 1959 owing to exhaustion of ore reserves after more than nine years of almost continuous operation.

The average Canadian price of silver in 1959 was 87.82 cents an oz. t. compared with 86.78 cents in 1958.

Platinum.—Canada is the second largest producer of the platinum group of metals, following the Union of South Africa. The output is derived from the smelting and refining of nickel-copper ores of the Sudbury district of Ontario. International Nickel and Falconbridge Nickel are the main producers, recovering the refined metals at their respective refineries near London, England, and Newark, New Jersey. Output of platinum in 1959 was 149,510 oz. t. valued at \$10,951,608 while in 1958 it was 146,092 oz. t. valued at \$9,481,371. Recent production of platinum is considerably lower than the postwar high of 199,565 oz. t. reached in 1957. Output of other metals of the platinum group in 1959 was 170,160 oz. t. valued at \$5,662,499 while in 1958 it was 154,366 oz. t. with a value of \$4,840,072.

Titanium.—Ilmenite, an iron-titanium oxide, is mined in the Allard Lake and St. Urbain areas of Quebec. During 1959 most of the Allard Lake ore was smelted by Quebec Iron and Titanium at Sorel, Que., to produce a high titania slag. Most of this slag is shipped to United States pigment producers and some goes to the Canadian market. Ilmenite from St. Urbain is sold as heavy aggregate and some of it is exported for the production of slag and ferrotitanium.

Cobalt.—Cobalt occurs in the copper-nickel ores of the International Nickel Company of Canada Limited and Falconbridge Nickel Mines Limited in the Sudbury area. International Nickel recovers the cobalt from its nickel refining operations at Port Colborne, Ont., and Clydach, Wales. Falconbridge recovers it in the refining of nickel-copper matte at its refinery at Kristiansand, Norway. Cobalt contained in the silver ores of the Cobalt-Gowganda area of Ontario is recovered by Deloro Smelting and Refining Company Limited at its smelter at Deloro, Ont. Sherritt Gordon Mines Limited produces refined cobalt and nickel-cobalt powder at its nickel refinery at Fort Saskatchewan, Alta., by refining nickel-copper concentrates shipped from its mine at Lynn Lake, Man. Canadian production of cobalt during 1959 was 3,298,328 lb. valued at \$5,927,003, an improvement over the 1958 output of 2,710,429 lb. valued at \$5,308,298 but below the record of almost 4,000,000 lb. set in 1957.

Tungsten.—During 1958 tungsten production from the operations of Canadian Exploration Limited at Salmo, B.C., amounted to 690,976 lb. of tungstic oxide (WO_3) valued at \$1,898,455. There were no other producers. In 1959 there was no production at Salmo, this being the first year since 1946 in which Canada did not produce tungsten ore.

Molybdenum.—Molybdenite Corporation of Canada Limited was the sole Canadian producer of molybdenite and molybdic oxide in 1959. Shipments from the company's mine at Lacorne, 23 miles northwest of Val d'Or, Que., amounted to 850,000 lb. of contained molybdenum valued at \$1,105,000 compared with 888,264 lb. valued at \$1,152,838 in 1958.

Selenium.—Selenium is derived from the refining of blister copper by Canadian Copper Refiners Limited at Montreal East where the company operates the largest selenium metal-and-salts plant in the world. International Nickel also produces selenium at Copper Cliff, Ont. Production in Canada in 1959 totalled 564,415 lb. valued at \$3,849,905 and in 1958 it was 306,990 lb. valued at \$2,302,426.

Magnesium.—Magnesium was produced by two companies in 1959. One of these, Magnesium Company of Canada Limited, ceased operations in September at Wakefield, Que., where it was mining a brucitic limestone. The sole producer in Canada at the end of 1959 was Dominion Magnesium Limited. Its thermal reduction plant and adjacent dolomite quarry are located at Haley, Ont. Production of magnesium in 1959 amounted to 11,633,213 lb. valued at \$3,489,964 compared with 13,591,705 lb. valued at \$4,064,825 in 1958.

Other Metals.—Canada also produces small quantities of antimony, bismuth, cadmium, calcium, tellurium, thorium and tin, largely as by-products in the refining of base metals. Of these minor metals, cadmium with a 1959 production valued at \$2,636,456 and tin valued at \$931,840 are the most important.

Subsection 2.—Industrial Minerals

The total value of industrial mineral production in 1959 reached an all-time high of \$490,545,000, reflecting Canada's continuing industrial growth. Several of the non-metallics contributed substantially to the increase of 14 p.c. over the 1958 total mineral production. New highs were established for gypsum, lime, nepheline syenite, salt, talc and soapstone, cement, clay products, sand and gravel; other non-metallics, including asbestos, recorded gains. The highlights of development in the industry during 1959 are outlined below.

Sulphur.—With the development of natural gas fields in the west, Canada is becoming an important source of elemental sulphur. Seven years ago Canadian needs for this commodity were met entirely by imports; today export outlets are essential to provide a market large enough to absorb the growing production.

Although pyrite, other sulphides and smelter gas are still the sources providing the greater part of the output of elemental sulphur, in 1959 about 30 p.c. of the total was recovered as a step in preparing sour natural gas for transmission to market by pipeline. By the end of the year there were in operation six recovery plants in Alberta, one in Saskatchewan and one in British Columbia, together capable of producing 590,000 long tons of elemental sulphur annually. Twelve additional plants were in various stages of planning, their construction depending on the development of markets for natural gas. With these plans fulfilled, Canadian recovery of elemental sulphur is expected to reach an estimated 2,000,000 tons per annum.

One of the important contributions to elemental sulphur production during 1959 was the completion by British American Oil Company Limited of a third recovery unit at its Pincher Creek plant in Alberta, increasing daily capacity to 678 long tons. The addition makes this the largest operation of its kind in the Commonwealth, and one of the world's major plants for recovering sulphur from sour natural gas. A new well with a daily open flow yield of over 200,000,000 cu. feet of raw gas was brought into production in the Pincher Creek field. At Okotoks, 20 miles south of Calgary, the extraction plant constructed jointly by Texas Gulf Sulphur, Devon Palmer Oil and Shell Oil was placed on stream on May 31. Erected at a cost of \$8,000,000, it is capable of processing daily 30,000,000 cu. feet of sour gas from the Okotoks field and extracting 375 tons of sulphur. At Nevis, Alta., B.A. Oil extended its gas processing plant to recover 75 tons of sulphur a day from Nevis field gas, which contains 6.8 p.c. H_2S .

Elemental sulphur is also being recovered in Eastern Canada. Laurentide Chemicals and Sulphur Limited, with a reported capacity of 100 tons daily, is recovering it at Montreal East from the petroleum wastes of five refineries located there. The International Nickel Company of Canada Limited is recovering this element at the Port Colborne refinery during the electrolysis of nickel matte. Since April, International Nickel and Texas Gulf Sulphur Company have operated a pilot plant near Copper Cliff, Ont., extracting elemental sulphur during the roasting of pyrrhotite concentrates.

Canada's emergence as one of the world's leading nations in the production of elemental sulphur appears assured. As the plans of the industry are completed, production will be considerably above domestic requirement and the creation of an export market is vital. With production costs comparable to or less than those of the established foreign sources, the main problem is cost of transportation to the larger marketing areas. In world markets, Canadian sulphur will be competing with Frasch sulphur from the United States and Mexico and the new by-product source at Lacq in southern France. The latter source is expected to reach an annual productive capacity of 1,400,000 tons by 1962.

Potash.—More than ten years of exploration and development in Western Canada were brought to a successful conclusion by Potash Company of America Limited when, late in 1958, it commenced production from Canada's first potash mine, situated at Patience Lake, 14 miles east of Saskatoon. Lying beneath a large area of southern Saskatchewan and southwestern Manitoba is believed to be the world's largest high-grade deposit of potash. Reserves indicated by drilling have been over 25 p.c. K_2O . The beds dip flatly to the southwest. The shallowest deposits found in place to date are at depths ranging from 2,800 feet near the Saskatchewan-Manitoba boundary east of Esterhazy to 3,335 feet near Saskatoon and 3,450 feet near Unity. Deposits of economic interest have been found only in Saskatchewan and in a small area in Manitoba along the Saskatchewan boundary. Potash minerals, mainly sylvite (KCl) and carnallite ($KCl \cdot MgCl_2 \cdot 6H_2O$), occur in three zones that are fairly distinct and continuous but vary in thickness and grade at different locations.

The importance of this source of one of the three major elements in fertilizers (nitrogen, potassium and phosphorus) is recognized in the large areas leased from the Saskatchewan Government and currently under exploration, and in the number of international companies participating. In addition to the Potash Company of America Limited which has completed its installation, two other companies have shafts partly completed: International Minerals and Chemical Corporation (Canada) Limited at Esterhazy, which mine is expected to be in production during 1961 with a capacity of 400,000 tons of potash salts annually; and Continental Potash Limited which plans to resume shaft-sinking eight miles west of Unity where potash occurs at a depth of 3,450 feet. At the end of 1959, 12 other companies representing Canadian, German, French and American interests were holding potash leases in Western Canada. Activity is centred mainly in a 25-mile belt extending southeast from Yorkton in Saskatchewan to the Manitoba boundary and in a central belt extending from west of Saskatoon to the Quill Lakes.

Though world potash mining capacity exceeds present-day consumption, the use of fertilizers is growing rapidly in many areas to meet the rising demand for agricultural production. For this reason, the Saskatchewan deposits have received the serious attention of the international potash industry.

Salt.—The salt industry in Canada has experienced a period of remarkable expansion. Production has almost doubled since 1957 and more than tripled in the past six years. In 1959, the fifth successive record year, output climbed to an estimated 3,233,512 tons valued at \$17,462,050, increases over 1958 of 36 p.c. and 16 p.c., respectively. This growth reflects the expanding market for mined rock salt, increased exports particularly of brine, and the growth of the chemical industry.

During 1959, two new rock salt mines came into production. At Goderich, Ont., Sifto Salt Limited, a subsidiary of Dominion Tar and Chemical Co. Ltd., began mining a 45-foot bed of excellent purity salt from a deposit lying beneath Lake Huron at a depth of 1,750 feet. Reserves are estimated at 900,000,000 tons. Salt mined at Goderich will be sold in the domestic and export markets for ice control and for industrial uses. In the Maritimes where there is a large market for coarse salt for fisheries, Malagash Salt Company Limited completed a new mine at Pugwash, N.S. A mine at Malagash, operated by the same company, was closed down as Pugwash came into operation.

Salt is produced at ten other plants located in Alberta, Saskatchewan, Manitoba, Ontario and Nova Scotia.

Asbestos.—Canada occupies the most prominent position in world asbestos, recovering one-half the total production. During 1959, Canadian asbestos mines increased their shipments by 13 p.c., marketing 1,042,000 tons of fibre with a value in excess of \$106,000,000.

Chrysotile, the most widely used variety of asbestos, occurs in several places in Quebec, Ontario, British Columbia and Yukon Territory. The main centre of the industry is in the Eastern Townships region of Quebec where 12 mines account for 94 p.c. of the Canadian production. Elsewhere in Canada there are two mines, one in northern Ontario and one in northern British Columbia.

During 1959, Cassiar Asbestos Corporation Limited increased the capacity of its mill in British Columbia by 50 p.c. to 1,500 tons daily. The deposit mined by Cassiar yields long and medium length of fibre characterized by a low iron content rendering it of particular interest to the electrical industry. Advocate Mines Limited continued exploration and development of a new deposit at Baie Verte on the Burlington Peninsula, Newfoundland, and a new deposit of chrysotile was discovered 30 miles south of Deception Bay in Ungava.

Construction Materials.—In 1959, as a result of the continued activity in building and road construction across the country, mineral raw materials were produced for construction needs at a record level, slightly above that of 1958. Producers' shipments of cement, clay products, lime, sand, gravel and stone exceeded \$314,000,000 in value.

The output of Canadian cement plants increased 2.3 p.c. in 1959 to 6,300,000 tons. For a number of years following World War II, considerable quantities of this commodity were imported into Canada; today, imports are insignificant and the industry is exporting about 5 p.c. of its production to the United States. A major development in 1959 was the construction of a large plant at Montreal by the firm Miron et Frères Ltée. A 500-by-15 ft. rotary kiln, the largest in Canada, with a capacity of 4,000,000 bbl. of clinker annually, was installed. This new operation raised the number of cement plants in Canada to 19 and their combined capacity to more than 8,500,000 tons annually. Saskatchewan Cement Corporation Limited completed a \$1,000,000 addition to its plant near Regina, and the capacity of the Edmonton plant of Inland Cement Company Limited was increased by 50 p.c.

In recent years the consumption of 'ready mixed' concrete has grown remarkably and more than 25 p.c. of all the cement used in Canada is now marketed in this form.

Crushed stone, sand and gravel used by the construction industry were produced in 1959 to a value of more than \$151,000,000, substantially the same as in 1958. This industry is being kept active by the accelerated road-building programs under way throughout the country.

In the lightweight aggregate industry, two new plants came into production during 1959. At St. François du Lac near Sorel, Que., Featherrock Incorporated began operating, at mid-year, a two-kiln plant using local clay and producing a coated aggregate. Late in the year British Columbia Lightweight Aggregates Limited completed a one-kiln plant on Saturna Island east of Sidney, B.C.

The clay products industry reported an 8-p.c. gain over 1958 with a value of production exceeding \$45,000,000, a new record. To keep up with the demand for building-brick, a new tunnel kiln was installed at the Laprairie plant of Cooksville-Laprairie Brick Limited, and a new tunnel kiln plant was erected at Hamilton, Ont., by Diamond Clay Products Limited. New equipment was installed by Medicine Hat Brick and Tile Company Limited for the manufacture of coloured, glazed-face brick. Production of this type of brick, the first in Western Canada for many years, reflects the use of more decorative types of brick and tile in keeping with modern trends in architectural design.

Subsection 3.—Petroleum and Natural Gas

The petroleum and natural gas industry resumed its customary rate of growth in 1959 after the setback in 1958, the first that had occurred in more than a decade. Production of crude oil and natural gas reached record levels in 1959 and the production advances were reflected in increased pipeline deliveries and higher domestic sales. In 1959 a total of 184,500,000 bbl. of crude oil valued at \$427,000,000 and of 427,804,000,000 cu. feet of natural gas valued at \$40,000,000 were produced. Exploration as a whole continued to decline slightly as a result of the large proportion of shut-in production capacity awaiting greater market outlets. The total geophysical crew-months worked in 1959 amounted to 825, down 22 p.c. from 1958 and 38 p.c. from 1957. Exploratory drilling activity was maintained and about 900 wells were completed. The most active exploratory areas were in the foothills region of Alberta and in northeastern British Columbia, where natural gas search was under way, and northwest of Edmonton in Alberta where oil discovery was the chief objective. Despite the over-all decline in exploratory activity, more emphasis than ever before was placed on exploration in areas where natural gas is more likely to be found. This was being done in anticipation of increased sales as markets in Eastern Canada and British Columbia expand and because of the prospect of increased exports to the United States.

Reserves of petroleum and natural gas were raised substantially. At the end of 1959 reserves of crude oil totalled 3,400,000,000 bbl. and proved recoverable reserves of natural gas amounted to 26,600,000,000,000 cu. feet.

Capital investment in the oil and natural gas industry during 1959 was close to \$600,000,000 in all phases: exploration, development, production, transportation, refining and marketing. This brought the total amount invested in the Canadian industry since 1946 to almost \$5,000,000,000.

The rate and scale of development of the petroleum and natural gas industry in Western Canada in recent years is indicated by the following production data.

1.—Crude Oil and Natural Gas Production in Western Canada, 1954-59

Year	Crude Oil				Natural Gas			
	Man.	Sask.	Alta.	B.C.	Man.	Sask.	Alta.	B.C.
	'000 bbl.	'000 bbl.	'000 bbl.	'000 bbl.	'000,000 cu. ft.	'000,000 cu. ft.	'000,000 cu. ft.	'000,000 cu. ft.
1954.....	2,148	5,423	87,714	—	—	3,333	107,174	—
1955.....	4,146	11,317	113,035	—	—	6,707	133,007	—
1956.....	5,787	21,077	143,910	148	—	9,808	146,134	188
1957.....	6,090	36,861	137,492	341	—	13,994	183,141	8,275
1958.....	5,829	44,626	113,278	512	—	18,820	239,050	63,638
1959.....	5,100	48,500	128,700	824	—	34,000	309,000	67,622

The natural gas figures given in Table 1 do not include gas flared in the field, which in 1954 amounted to about 20 p.c. of gross gas production. The quantity of gas flared rose to 27 p.c. of production during 1956 and 1957 and declined in 1958 to 19 p.c. The rising demand for natural gas and the higher prices offered will permit the economic gathering of more and more gas that might otherwise be wasted.

British Columbia.—In British Columbia, exploration primarily directed towards natural gas has extended to the northern limits of the province. Discoveries in 1959 east and north of Fort Nelson and subsequent tests indicate the presence of major gas resources. Exploratory work at the year-end had extended northward across the border into the Northwest Territories. Farther to the south, about 100 miles northwest of Fort St. John, development drilling in natural gas fields was continued at a rate comparable with 1958 to meet the immediate needs of Westcoast Transmission Company which transports natural gas to the Pacific Coast. In all, 41 'wildcat' wells were drilled in British Columbia, 17 of which discovered gas and one of which discovered oil. The success discovery ratio continued to be the highest of any province. At the end of 1959 there were seven oil fields in British Columbia compared with six in 1958. The market for crude in this region was still local in 1959; consequently, production came mainly from the Boundary Lake and Fort St. John fields which are close to the refineries of the Peace River region.

Alberta.—Forty-two of the 350 exploratory wells drilled in Alberta in 1959 found oil and 45 found gas. The most concentrated exploratory drilling was in the Virginia Hills-Swan Hills-Judy Creek region, about 110 miles northwest of Edmonton. Following the initial discovery of crude oil at Virginia Hills in 1957, the Swan Hills field was found in 1958 about 25 miles to the northeast. In 1959 the Judy Creek field, about 14 miles south of Swan Hills, was discovered and, subsequently, about half-way between Judy Creek and Swan Hills, another discovery was made at Sarah Lake. Exploratory drilling has extended all of these areas. More recent discoveries give weight to a theory that the Swan Hills, Judy Creek and Sarah Lake fields may be part of a large single reservoir comparable in size to the huge Pembina field which has recoverable reserves of oil in the order of 1,000,000,000 bbl.

Development drilling continued to constitute the major portion of the drilling within the province, accounting for about 78 p.c. of all wells drilled. The most actively developed field was the Pembina field where 25 p.c. of all development wells were drilled. Second, was the Swan Hills field which accounted for almost 7 p.c., followed by the Keystone, Lobstick and Kaybob oil fields. Of the gas fields, the Medicine Hat, Hussar and Cessford fields were being most rapidly developed.

Saskatchewan.—Exploratory work declined significantly in Saskatchewan from the peak levels reached in 1957. In addition to declines in the geophysical and geological phases, exploratory drilling slumped from the high of 355 wells in 1957 to 222 in 1958 and 175 in 1959. The success ratio, which during the peak years in 1956 and 1957 was the highest in Canada, fell considerably. There were no significant new discoveries in 1959.

Development drilling in established fields in 1959 was at the same level as in 1958 when 581 development wells were drilled. About 17 p.c. of all development drilling was done in the Steelman field followed by Weyburn, Alameda, Carnduff, Queensdale and Midale, all in the southeast corner of the province.

Manitoba.—Exploratory drilling in Manitoba was largely unproductive in 1958 and 1959. In each year, 16 wells were drilled but only one well, drilled in 1958, was successful. No new fields have been discovered since 1957 when the Kirkella field was found. Development drilling in 1959 was at about half the level of 1958, when 76 wells were drilled.

Yukon and Northwest Territories.—One of the most significant oil strikes during 1959 was that made in the Yukon Territory at the Chance Number 1 well. This well is 325 miles northwest of the Norman Wells field, which is the only producing field in the Territories. The success in this virgin region has extended the boundaries of known oil resources in the Western Canada sedimentary basin to within 200 miles of the Arctic Coast. In all, five wells were drilled in the Territories in 1959 but four were dry holes.

Land holdings in the Territories amounted to 98,000,000 acres. In addition, 130,000,000 acres in the Arctic Islands were held by persons, pending revision of the Territorial Oil and Gas Regulations (see pp. 566-567).

Eastern Canada.—In Eastern Canada, exploration for oil and gas continued at close to the same rate as in 1958 but only in Ontario was the work successful. Four wells drilled in Prince Edward Island and New Brunswick during 1959 proved unproductive and the rig was moved to Cape Breton Island to test locations there. In Ontario the most noteworthy success was the offshore oil discovery near Colchester which was rated as one of the best discoveries ever made in this province. Natural gas discoveries in the Port Maitland area increased the provincial potential by about 5,000,000 cu. feet daily.

Petroleum Refining and Marketing.—No new refineries came on stream in 1959 but two were under construction and scheduled to come into operation by mid-1960. These bring the total number of operating refineries in Canada to 44 and cause some change in refining capacity distribution by raising the Maritime's portion to about 8 p.c. and Quebec's to about 32 p.c. During 1959 plant expansion and modernization increased crude oil capacity to 857,000 bbl. daily. In terms of crude throughput capacity, the Canadian industry ranks third in the world after the United States and the United Kingdom. The rate of growth of the refining industry is illustrated by the data in Table 2.

2.—Petroleum Refining Throughput Capacity, by Region, 1940, 1950 and 1959

Region	1940		1950		1959 ^a	
	bbl. per day	p.c.	bbl. per day	p.c.	bbl. per day	p.c.
Maritime Provinces.....	32,750	15.1	22,300	6.2	49,300	5.8
Quebec.....	64,500	29.6	143,000	39.8	264,800	30.9
Ontario.....	57,500	26.5	75,200	21.0	251,422	29.3
Prairie Provinces and Northwest Territories.....	38,020	17.5	89,525	25.0	192,435	22.5
British Columbia.....	24,500	11.3	28,850	8.0	99,250	11.5
Canada.....	217,270	100.0	358,875	100.0	857,207	100.0

The domestic market has always been the major outlet for Canadian crude oil, although the substantial markets in the United States in areas easily accessible to Canadian sources may assume a greater importance in the future. Refineries in Western Canada have, since 1955, used Canadian crude oil exclusively while plants in Ontario have been taking a greater share of their requirements from domestic sources. In 1959, Ontario met more than 97 p.c. of its demand from domestic sources. Ontario is now the major market for Western Canadian crude oil and in 1959 took almost 50 p.c. of the 150,000,000 bbl. of Canadian crude oil delivered to refineries within Canada. British Columbia refineries received over 22,000,000 bbl. and those in the Prairies over 54,000,000 bbl.

The progress made in the marketing of Canadian crude oil in Canada and the extent of the use of foreign crude oil are indicated in Table 3.

3.—Crude Oil Received at Canadian Refineries, by Region, 1940, 1950 and 1959

Region	1940		1950		1959	
	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign
	bbl. per day	bbl. per day	bbl. per day	bbl. per day	bbl. per day	bbl. per day
Quebec and Maritimes.....	—	56,040	—	133,364	—	296,608
Ontario.....	507	41,918	681	68,630	198,165	7,340
Prairie Provinces and Northwest Territories.....	22,367	1,867	71,422	633	151,727	—
British Columbia.....	—	16,805	—	21,458	64,085	—
Canada.....	22,874	116,630	72,103	224,085	413,977	303,948

Exports of crude oil, all to the United States, were slightly higher in 1959 than in 1958 when 31,679,429 bbl. were exported. In 1959, pipeline deliveries to the United States amounted to 33,800,000 bbl., 13,296,000 bbl. of which were consigned to refineries located in the Puget Sound area of Washington and 20,504,000 bbl. to plants in the Great Lakes region.

Natural Gas Marketing.—Domestic markets as far east as Montreal were using Western Canada gas during 1959 and distribution companies were expanding their facilities to meet market requirements. By the end of 1959 approximately 100,000,000 cu. feet of Western Canada natural gas were being used daily in Ontario. This domestic gas, which first entered Eastern Canada in 1958, supplanted the large imports of gas made at Niagara and Windsor in Ontario.

Domestic sales of natural gas reached an estimated 280,000,000,000 cu. feet in 1959, equivalent to a 35-p.c. increase over 1958. Exports totalled 83,583,000,000 cu. feet. Domestic sales in 1959, by provinces on a percentage basis, were as follows: British Columbia 6.6 p.c., Alberta 48.9 p.c., Saskatchewan 10.8 p.c., Manitoba 2.9 p.c., Ontario 28.9 p.c. and Quebec 1.9 p.c.

The rapid build-up of reserves of natural gas in Alberta and British Columbia in recent years has attracted the attention of companies interested in supplying substantial markets in the United States. During 1959, the National Energy Board was set up by the Government of Canada with one of its prime responsibilities designated as the regulation of the movement of natural gas across interprovincial and international borders. The establishment and activities of the Board up to mid-1960 are outlined in Chapter XXI, Part IV, Section 2.

PRINCIPAL MINING LOCATIONS IN CANADA

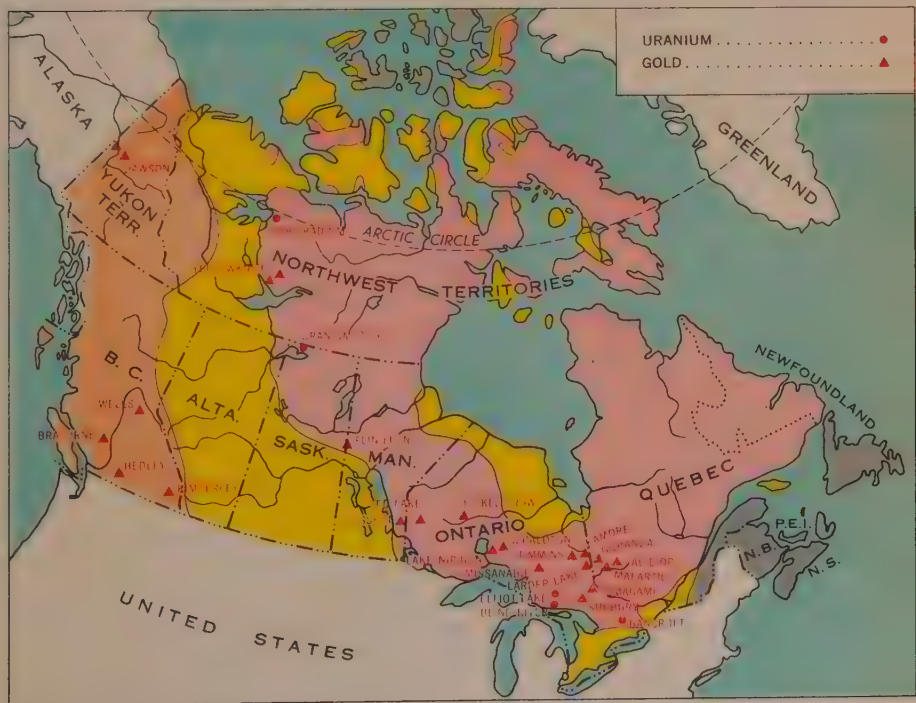
October, 1960

These maps show area locations only, without indication as to size or number of mines at such locations.

The names given are field names or those of nearby communities.

LEGEND

-  Canadian Shield
-  Plains (including Plateaux and Lowlands)
-  Appalachian Region
-  Cordilleran Region
-  Innuitian Region





Subsection 4.—Coal

The continuing conversion to oil and gas by the railways, various industries and commercial and household consumers, aided to some extent by the general recession in 1958, resulted in further contraction of the Canadian coal industry.

In 1958 the industry suffered its greatest loss in eight years; production dropped to 11,687,110 tons, 11.4 p.c. from 1957 and 38.9 p.c. from the record of 19,139,112 tons in 1950. Production in 1958 was the lowest since 1912. Of the 1958 output, 66.3 p.c. was bituminous coal, 14.5 p.c. subbituminous and 19.3 p.c. lignite. Nova Scotia contributed about 45 p.c. of the total, Alberta 22 p.c., Saskatchewan 19 p.c., British Columbia and Yukon Territory over 7 p.c. and New Brunswick just under 7 p.c. Whereas Nova Scotia, New Brunswick, Alberta, British Columbia and Yukon Territory showed, collectively, a decrease of 14 p.c. compared with 1957, Alberta's change, the greatest in volume, amounted to a decrease of 20.2 p.c., bituminous coal accounting for 68 p.c. of this decrease. For the country as a whole, the production of bituminous coal decreased by about 15 p.c. and of subbituminous coal by about 11 p.c. Saskatchewan's output, consisting entirely of lignite, remained practically unchanged at 2,253,176 tons.

The apparent total consumption of coal in Canada amounted to 25,208,878 tons in 1958, a drop of 20 p.c. from 1957 and of 43.8 p.c. from 1950, the year of record production. Whereas in 1957 just over 60 p.c. of the coal consumed was imported, in 1958 the percentage was down to just over 56 p.c., of which about 89 p.c. was bituminous coal used in Central Canada. Some 4,000,000 tons, or almost 32 p.c. of the total bituminous coal imported, were used in the manufacture of metallurgical coke in Central Canada. Coal imports decreased by almost 26 p.c. from 1957, while the indigenous production decreased by about 11 p.c. Coal sales made by retail fuel dealers decreased 15 p.c. from 1957, railway coal decreased by over 58 p.c., and coal used for industrial purposes by 5.5 p.c. It may be noted that, as a result of dieselization, the annual consumption of coal used by railway locomotives decreased from 11,444,251 tons in 1949 to 1,393,823 in 1958. Whereas in the recent past the industrial coal market seemed to have levelled off, it now appears that this market is again yielding to liquid and gaseous fuels.

The consumption of briquettes, of which about 62 p.c. are made from bituminous coal, decreased sharply from 467,825 tons in 1957 to 239,770 tons in 1958. About 46 p.c. of the amount marketed (54 p.c. of the Canadian output) was used by railways in Western Canada mainly as locomotive fuel. However, the railway market for this type of fuel dropped from 287,000 tons in 1957 to 110,607 tons in 1958 and household and commercial consumption decreased from 180,825 tons to 129,163 tons.

Although the coal industry's economic position continues to be weakened, necessitating the closing down of mines in both Eastern and Western Canada, efforts are being made to improve its competitive position in the market by reducing costs of production, improving quality, and tailoring the types and grades of coal to suit varied consumer requirements. Mechanization of underground mining is progressing, especially in eastern collieries where most of the coal is mined mechanically. The Dosco ripper-type continuous mining machine is used in most of the mines of the Dominion Coal Company Limited on longwall faces. A newly developed machine equipped with a wedge and shearing bar is being used to increase the quantity of coarse coal. Dominion Coal also uses Joy ripper-type machines for development work, and a smaller company uses a similar type machine as well as two auger-type machines for room and pillar mining.

Strip mining, practised in all provinces except Nova Scotia where conditions are not suitable for such mining, also aids in reducing costs. Over 36 p.c. of Canada's 1958 output was produced by this method; the whole of Saskatchewan's lignite output was strip mined, 83.5 p.c. of New Brunswick's, almost 50 p.c. of Alberta's and 12.5 p.c. of British Columbia's. On an average the output per man-day in strip mining increased from 14.3 tons in 1957 to 15.3 tons in 1958, compared with a slight decrease from 2.89 tons to 2.87 for underground mining. The over-all output per man-day increased by over 2 p.c.

In an effort to produce better quality coals of greater versatility, the industry continues to direct attention to the use of modern methods of cleaning, drying, dust- and freeze-proofing, and briquetting. Additional facilities for cleaning and drying various sizes of coal, including fines, have been installed at several collieries in both Eastern and Western Canada.

Assistance is given to the coal industry by the Dominion Coal Board in the movement of coal to competitive markets (see p. 561). During 1958 coal moved under subvention was as follows: from Nova Scotia, 2,370,131 tons; from New Brunswick, 120,963 tons; from Saskatchewan, 297,892 tons; and from Alberta and British Columbia, 216,825 tons—39 p.c. of all the coal produced in Canada. The total was 6.7 p.c. lower than in 1957.

Details on coal in the respective coal-producing provinces follow.

Nova Scotia and New Brunswick.—Nova Scotia produces high volatile and medium volatile bituminous coking coals in the Sydney, Cumberland and Pictou areas and some non-coking bituminous coal in the St. Rose, Inverness and Port Hood areas (west coast of Cape Breton Island). Production in 1958 was 7.3 p.c. lower than in 1957, amounting to 5,269,879 tons valued at \$9.554 per ton f.o.b. mines. Many of the operations have been mechanized to cut costs and new equipment has been developed to reduce the quantity of slack coal produced. During the year about 13 p.c. of the coal mined in the province was mechanically cleaned.

New Brunswick's coal output comes entirely from a single thin seam (with an average thickness of 18 in.) of high volatile bituminous coal in the Minto area. Output decreased from 976,597 tons in 1957 to 790,719 tons in 1958 valued at \$8.374 per ton. The two cleaning plants established since 1955 allow for the beneficiation of over 34 p.c. of New Brunswick's production. Both plants are equipped with modern mechanical and thermal drying machines permitting the production of uniform quality products.

Much of the output of Nova Scotia and New Brunswick is used locally for industrial steam-raising for power production and processing, for household and commercial heating, and for the manufacture of metallurgical coke. In 1958 approximately 41 p.c. of the output was shipped to Central Canada for industrial, commercial and railway use. Of this, more than 95 p.c. originated in Nova Scotia.

Saskatchewan.—This province produces only lignite coal from the Bienfait and Roche Percee fields in the Souris area. Production amounted to 2,253,176 tons in 1958, approximately the same as in 1957, and was valued at \$1.944 per ton at the mine. On the average, this is the cheapest coal per million B.t.u. at 12.64 cents, as against 32.62 cents for all Canadian bituminous coals and 25.79 cents for all subbituminous coals. Slightly less than 52 p.c. of the 1958 output was shipped to Manitoba and about 10 p.c. to Ontario for industrial, commercial and household use.

The output of briquettes, which are made from carbonized lignite and used entirely for household and commercial purposes, increased slightly in 1958 to 41,142 tons.

Alberta.—Almost all types of coal are found in Alberta—semi-anthracite and low volatile bituminous coking coals in the Cascade area, and medium to high volatile bituminous coking coals in the Crowsnest and Mountain Park areas. Owing to the shrinking market, mining has been terminated in the Mountain Park area and has been seriously curtailed in the Crowsnest area. These mines mainly produced industrial steam and railway coals, but also supplied some commercial and household markets. Lower rank bituminous non-coking coals are produced in the Lethbridge and Coalspur areas and in several other areas of the Outer Foothills belt. The coals in the Drumheller, Edmonton, Brooks, Camrose, Castor, Carbon, Sheerness, Taber, Pembina and Ardley areas are subbituminous and those in the Tofield, Redcliff and several other areas are on the border of subbituminous and lignite. All these lower rank coals are mainly household and commercial coals, but increasing amounts are being used industrially, especially for thermal power production. The strip-mined coals, valued f.o.b. mines at a weighted average of \$2.921 per ton as against a weighted average value of \$7.101 per ton for underground-mined coal, are mainly used for power production.

Production declined in the province from 3,156,546 tons in 1957 to 2,519,901 tons in 1958. Since the discovery of the Leduc oil field in 1947 and the subsequent expansion of the natural gas industry, coal output has dropped by almost 71 p.c. About 67 p.c. of the 1958 Alberta output was subbituminous. The production of bituminous coal decreased by 34.2 p.c. to 834,256 tons, whereas that of subbituminous decreased by only 10.8 p.c. The average value of bituminous coal f.o.b. mines was \$6.326 per ton and subbituminous \$4.467, both slightly lower than in 1957.

The output of briquettes, which are made from the semi-anthracite and low volatile bituminous coals of the Cascade area and the medium volatile bituminous coals of the Crowsnest area, continued downward, dropping from 269,147 tons in 1957 to 128,502 tons in 1958. Of the total manufactured, about 38.5 p.c. was made in the Cascade area.

Of the total production of all the coals mined in Alberta, about 9 p.c., consisting to a large extent (79 p.c.) of subbituminous coal, was shipped to Manitoba, 23.2 p.c. to Saskatchewan and 21.2 p.c. to British Columbia for both industrial steam-raising and household use. Only about 2.1 p.c. was shipped to Central Canada to be used mainly for commercial purposes.

British Columbia.—Bituminous coking coal, ranging from high to low volatile, is mined on Vancouver Island and in the East Kootenay (Crowsnest), Telkwa and Nicole (Merritt) areas. Small quantities of subbituminous coal are produced in the Princeton field. Mining on Vancouver Island was confined almost entirely to one mine in the Comox area. Production in British Columbia in 1958 amounted to 849,091 tons compared with 1,113,699 tons in 1957. The 1958 total included 4,344 tons and the 1957 total 7,731 tons mined in the Yukon Territory. Of the total, about 80 p.c. was produced in the Crowsnest area. The average value of British Columbia bituminous coal was \$6.160 per ton for the Crowsnest area and \$8.846 per ton for Vancouver Island. Of the total production about 17.5 p.c. was shipped to Manitoba and 7.6 p.c. to Ontario.

Medium temperature oven (by-product) coke for industrial consumption in Western Canada and northwestern United States is manufactured in the Crowsnest area, somewhat under 200,000 tons being produced in 1957. The single briquetting plant in the province, which is located in the Crowsnest area, produced 34,396 tons (about 85 p.c. railway fuel) in 1958 as against over 84,000 tons in 1957. Approximately 8 p.c. of the provincial output of coal, which was coking coal from the Crowsnest area, was exported to southwestern United States for blending in the manufacture of metallurgical coke.

Section 2.—Government Aid to the Mineral Industry

Subsection 1.—Federal Government Aid

The Department of Mines and Technical Surveys.*—The federal Department of Mines and Technical Surveys came into being on Jan. 20, 1950, in the reorganization of the former Department of Mines and Resources. The Department has five branches—Surveys and Mapping Branch, Geological Survey of Canada, Mines Branch, Dominion Observatories, and Geographical Branch. The Department's functions include the administration of the Emergency Gold Mining Assistance Act and of the Explosives Act.

Surveys and Mapping Branch.—The Branch provides the base maps required for use in the development of Canada's natural resources, produces and distributes many Canadian aids to navigation, is responsible for legal surveys of federal lands and provides a national system of levelling and precision surveys for use as geodetic control by federal, provincial and private agencies.

The Geodetic Survey provides the original surveys that form the framework or basic control for mapping throughout Canada and for engineering and surveying projects related to natural resources development. Survey stations are established at fairly

* Revised, under the direction of the Deputy Minister, in the Editorial and Information Division, Department of Mines and Technical Surveys, Ottawa.

regular intervals across Canada and are marked by permanent monuments whose latitudes, longitudes and elevations above mean sea level are determined with a high degree of accuracy.

The Topographical Survey provides topographical maps that show all significant natural and artificial features fundamental to the study and economic development of mineral and other natural resources. The Field Survey Section is responsible for the field surveys that provide ground control for mapping from aerial photographs, and the Air Surveys Section plots and produces maps from these aerial photographs. The National Air Photographic Library indexes, preserves and distributes prints of all aerial photography done by or for the Federal Government. The Topographical Survey also administers the Canadian Board on Geographical Names.

The Legal Surveys and Aeronautical Charts Division makes and records legal surveys of federal Crown lands in the Yukon and Northwest Territories, the National Parks and Indian lands and reserves. This Division prepares aeronautical charts and electoral maps and prepares and distributes flight manuals.

The Canadian Hydrographic Service is responsible for the charting of the coastal and inland navigable waters of Canada, the analyses of tides and tidal current phenomena and the investigation of water-surface elevations of the St. Lawrence-Great Lakes waterway. The resultant data are published in the form of official navigation charts, volumes of Sailing Directions, Tide Tables and Water Level Bulletins.

The Map Compilation and Reproduction Division prepares, drafts and reproduces maps, charts and plans for lithographic printing in multicolour. The work includes the preparation and photo-reproduction of air chart bases, the reproduction and printing of air information for aeronautical charts, the preparation and printing of topographic maps and the reproduction and printing of hydrographic charts.

*Geological Survey of Canada.**—The primary function of the Geological Survey is to obtain information on the geology of Canada that will be of assistance in the search for and development of mineral deposits. The results of its activities also provide a basis for the appraisal and conservation of Canada's mineral resources generally, including water supplies, for soil surveys, and for the solution of geological problems that frequently arise in construction projects. Reports issued by the Geological Survey include: memoirs with fairly complete descriptive accounts of the geology of particular areas, usually accompanied by geological maps; bulletins dealing with problems rather than areas; papers issued as soon as possible after the close of the field season, treating separately of each area and summarizing the information acquired; and the Economic Geology Series dealing in a comprehensive way with mineral deposits of a particular type. Information circulars, issued in advance of the more detailed reports, contain data of immediate interest to prospectors. Coloured geological maps are issued on various scales from one inch equalling a few hundred feet to one inch equalling eight or more miles, the common standard scales being one inch to one mile and one inch to four miles. Preliminary maps showing the geology are issued shortly after the field season ends for those areas where the search for metals or minerals is active. Metallogenic maps show the Canada-wide distribution of known occurrences of particular metals classified according to the type of deposit.

The Regional Geology Division is responsible for mapping and studying the rocks of the eastern and western segments of the Precambrian shield, and the Appalachian and Cordilleran regions.

The Economic Geology Division investigates the geology of specific mineral deposits, applies and develops geochemical techniques, and maps and studies unconsolidated deposits that mantle much of the country and, in several provinces, carries out surveys of groundwater resources.

* A special article covering the history and current activities of the Geological Survey of Canada appears at pp. 13-19.

The Fuels and Stratigraphic Geology Division includes stratigraphic palaeontology, the geology of fuels (oil, natural gas and coal), subsurface geology, and research on coal. Its function is to establish the character, age, thickness and correlation of both exposed and concealed sedimentary formations and to map the distribution and structure of these formations with the object of determining the economic possibilities of prospective oil, gas and coal bearing areas of Canada.

The Petrological Sciences Division makes mineralogical, petrological, and isotopic studies of Canadian mineral deposits and associated rocks. Laboratories provide mineral identifications for the public, supply officers of the Survey with mineralogical and geochronological data, and permit research on the genesis of ores, fuels and rocks. Systematic mineral collections are maintained and mineral and rock collections are prepared for use by prospectors and educational institutions.

The Geophysics Division gathers, compiles and interprets geophysical data relating to the geology of Canada. Fundamental research is carried out in some phases of geophysical work.

Mines Branch.—Investigations undertaken in Branch laboratories cover a wide range of technical projects of importance to the advance of fundamental research; to the processing of ores, industrial minerals and fuels on a commercial scale; and to the theory and practice of physical metallurgy.

The Mineral Processing Division is concerned primarily with the development of economical methods of mineral dressing and with research toward the improvement of present processing techniques. It is equipped to conduct laboratory and pilot-plant studies involving a variety of procedures: crushing, grinding, gravity concentration, sink and float (heavy media) separation, magnetic and electrostatic concentration, amalgamation, cyanidation, flotation and roasting. Tests are conducted on both metallic and non-metallic minerals.

The Extraction Metallurgy Division seeks the development of better hydrometallurgical and pyrometallurgical processes for the treatment of ores and the solution to specific technical problems in this field. A substantial part of its efforts was recently devoted to ores of uranium, iron and other elements and to corrosion problems encountered in certain industrial and governmental projects. The Division accepts samples from operating mines or those under development.

The Mineral Sciences Division applies the principles of chemistry and physics to fundamental and long-term problems in the field of mineral technology and related aspects of metallurgy. It deals with ores, mineral and metal products, inorganic crystalline materials and radioactive substances. Its work ranges from relatively simple routine determinations to complex research problems requiring the most recent techniques and equipment.

The Fuels and Mining Practice Division studies the properties of fossil fuels in Canada to determine the most efficient means of utilizing fuel resources. Most of the work on coal is directed to investigations on the immediate problems of the industry and to engineering studies on the most efficient use of coal in combustion applications with particular reference to thermally generated electric power. Such investigations include work on the evaluation of cleaning performance and the beneficiation of coal fines that are difficult to market, the uses of coal in the metallurgical industries and the study of stress phenomena in mining. Research in petroleum is directed mainly to problems in the refining of heavy crudes and high-sulphur bitumens, and to the chemical evaluation of oils and bituminous substances for classification and genetic purposes.

The Physical Metallurgy Division aids the metal industries through the development of new alloys, new manufacturing techniques and new applications and in activities aimed toward improving present practices in metal fabrication. It also conducts fundamental research on the properties and behaviour of metals. The Division serves the Department of National Defence by extensive research and investigative work, concerned broadly

with the development of defence materials and prototype equipment and with the metallurgical problems of that Department. It is also operative in the nuclear metallurgy field.

Dominion Observatories.—The two main units of the Dominion Observatories are the Dominion Observatory at Ottawa, Ont., and the Dominion Astrophysical Observatory at Victoria, B.C. Permanent magnetic observatories are maintained at Ottawa and Agincourt, Ont., Meanook, Alta., Victoria, B.C., and at Resolute Bay and Baker Lake, N.W.T. Seismic stations for recording earthquakes are operated at Victoria, Horseshoe Bay and Alberni, B.C., Banff, Alta., Saskatoon, Sask., Ottawa, Ont., Seven Falls and Shawinigan Falls, Que., Halifax, N.S. and Resolute, N.W.T.

The Dominion Observatory at Ottawa is responsible for the time service of Canada which involves nightly astronomical observations of star positions and radio broadcast services for distributing accurate time to all parts of Canada. Other astronomical activities centred at Ottawa include upper atmospheric studies by means of meteor observations, studies of the sun and its effect on earthly conditions and mathematical studies of the atmospheres of the sun and stars. The geophysical work, also administered from Ottawa, includes the magnetic survey of Canada with emphasis on aids to air and sea navigation, as well as field and observatory work of interest to the geophysical prospector. The methods of seismology are employed to study important aspects of the earth's crust in Canada and to assist in world-wide investigations of the earth's interior. Gravity observations are carried on throughout Canada with a generally similar purpose, special attention being paid to methods of locating mineral deposits.

The Dominion Astrophysical Observatory at Victoria, B.C., is devoted to fundamental research into the physical characteristics of the sun, stars, planets and the material of interstellar space. Its 73-inch reflecting telescope is one of the largest in the world and through its use many important contributions have been made to astronomical knowledge. A new radio telescope at Penticton, B.C., has given the Branch a valuable instrument for research in radio astronomy.

The Geographical Branch.—The function of the Branch is to organize and make available all the geographical data on Canada that might be of use in promoting the country's economic, commercial and social welfare. The work is of two kinds—the compilation of geographical material of national significance, and geographical surveys in the field. Land surface conditions, types of vegetation and the structure of towns and cities are typical subjects of investigation.

Mineral Resources Division.—The Division provides a mineral information service that is freely used by government departments, mining and allied industries and others interested in mining or its significance in the Canadian economy. A mineral resources index inventory is maintained of all known occurrences and of mines, both active and potential. The Division makes economic studies of different phases of the mining industry. It administers the Emergency Gold Mining Assistance Act, prepares reports on request to aid in the administration of such matters as tax exemptions on new mining properties, and prepares reports and briefs on general legislation, taxation and tariff matters connected with the mineral industry. The Division is widely known for its publications among the most valuable of which are the annual reviews of production, marketing and other matters concerning 64 minerals. It issues more detailed economic studies of metals and fuels of current interest and prepares annual lists of metallurgical works, metal and industrial mineral mines, milling plants, coal mines and petroleum refineries. Also published are special monographs on mining laws, taxation and subjects of particular interest to the mineral industry.

Oceanography.—The decision of the Federal Government to expand oceanography in the Department of Mines and Technical Surveys has led to the institution of a long-range program of research to fill the great need for oceanographic data on the country's coastal waters for defence and resource development purposes.

The program comprises: (1) The establishment on the East Coast, in the Bedford Basin near Halifax, of the Bedford Institute of Oceanography. This is a \$3,000,000 project which should be completed by 1964. When in operation, it will have a staff of some 300 scientific personnel and supporting staff. The Institute will have the facilities for study in all phases of oceanography and an operating fleet of 10 oceanographic vessels. A multi-million dollar shipbuilding program is planned to provide the fleet; the first vessel, the \$7,000,000 CGS *Hudson*, is expected to be commissioned in 1961. (2) The Polar Continental Shelf Project, in which the Department will send each year a scientific expedition into the Arctic wastes north of the Canadian Archipelago to carry out a broad program of research on its Continental Shelf in the Arctic Ocean. The initial expedition in 1959 was reconnaissance in nature. Starting in 1960, the research teams manning the expeditions will begin intensive research on the Shelf; study and map the topography of the ocean floor; measure the movements, temperature and chemical properties of the water at various depths; study the geology of the Shelf's floor and compare it with that of the adjoining land, and study the structures underlying the floor.

The Dominion Coal Board.*—The Board was established by the Dominion Coal Board Act (RSC 1952, c. 86) which was proclaimed on Oct. 21, 1947. By this Act the Board was constituted a department of government to advise on all matters relating to the production, importation, distribution and use of coal in Canada. The Board is also charged with the responsibility of advising upon and administering transportation subventions.

Ancillary to these principal duties, the Board is empowered to undertake research and investigations with respect to:—

- (1) the systems and methods of mining coal;
- (2) the problems and techniques of marketing and distributing coal;
- (3) the physical and chemical characteristics of coal produced in Canada with a view to developing new uses therefor;
- (4) the position of coal in relation to other forms of fuel or energy available for use in Canada;
- (5) the cost of production and distribution of coal and the accounting methods adopted or used by persons dealing in coal;
- (6) the co-ordination of the activities of government departments relating to coal; and
- (7) such other matters as the Minister may request or as the Board may deem necessary for carrying out any of the provisions or purposes of the Act.

In addition, the Dominion Coal Board Act provides authority in the event of a national fuel emergency to ensure that adequate supplies of fuel are made available to meet Canadian requirements.

Assistance by transportation subventions, which have been maintained in varying degrees during the past 30 years, was designed to further the movement of Canadian coals by equalizing as far as possible the laid down costs of Canadian coals with imported coals. As these costs and the conditions of the coal industry are subject to variation, the Board must review from time to time the rates of subvention and the areas where the assistance is required. The subventions in respect of the various Canadian coals are authorized by Orders in Council and are paid from moneys voted by Parliament for the purpose from year to year. During the year ended Mar. 31, 1959, a total of 2,729,552 tons was shipped under subvention and \$9,186,021 was paid in assistance.

Coal subventions of a new type, based on the B.t.u. content of coal used in thermal electric power production, were authorized in January 1958 by the Atlantic Provinces Power Development Act (SC 1958, c. 25). The Dominion Coal Board was designated as the Federal Government's administrative agency for subvention matters in agreements made with the provinces under this Act.

As agent to the Minister of Mines and Technical Surveys, the Board receives applications and administers loans under the Coal Production Assistance Act (RSC 1952, c. 173, as amended by SC 1958, c. 36, and SC 1959, c. 39). The Board also administers payments under the Canadian Coal Equality Act (RSC 1952, c. 34), which provides a subsidy on

* Prepared under the direction of W. E. Uren, O.B.E., Chairman of the Dominion Coal Board.

Canadian coal used in the manufacture of coke for metallurgical purposes. In the year ended Mar. 31, 1959, payments under this Act totalling \$266,647 were made on 538,680 tons of coal.

The Dominion Coal Board has maintained a continuous review of Canada's fuel requirements. In view of the growing impact of oil and natural gas on the markets for Canadian coal, the Board and its staff have intensified the study of the relation of the competing sources of energy and of possible new outlets for the solid fuel.

The Board, since its inception, has worked toward the co-ordination of the activities of various government departments and other bodies relating to coal. On the matter of technical research as related to marketing and distributing coal, the Board has maintained close liaison with the Fuels and Mining Practice Division of the Department of Mines and Technical Surveys. Dominion-provincial conferences on coal research have been held annually since 1949 for the purpose of co-ordination and exchange of ideas.

Government purchases of fuel which constitute an important outlet for coal have claimed a part of the Board's time. The Interdepartmental Committee on Fuel, set up in the past to co-ordinate and advise on the purchase and supply of fuel to the Armed Services, has remained active. The Dominion Fuel Committee, which was organized in 1956 along similar lines as an advisory body to other government departments, has demonstrated its value.

In a wider sphere, the Chairman of the Board has met annually with the Coal Policy Committee of the Provincial Ministers of Mines and the Board has given consideration to recommendations made by the latter body relating to coal. The Board has also kept contact with trade and other associations concerned with the various phases of the Canadian coal industry in order to foster better mutual understanding of government and private endeavour. It has generally constituted a central agency through which representations may be made to the Government.

Pursuant to the recommendations of the Royal Commission on Coal (1946), the Board has continued to work for a reduction of customs duties and sales tax on coal mining machinery. It has also maintained its efforts to create a uniform system of coal mine cost accounting which would provide an accurate presentation of the cost of production.

The Dominion Coal Board consists of seven members including the Chairman who is its Chief Executive Officer and has the status of a deputy minister. The Board is responsible to, and subject to the direction of, the Minister of Mines and Technical Surveys.

Subsection 2.—Provincial Government Aid*

Newfoundland.—The Newfoundland Government, through its Mines Branch, provides several valuable services to those interested in prospecting and mining. It supplies certain geological maps of specific areas to interested parties. It identifies specimens sent in from Newfoundland and Labrador and assays by chemical means those that appear to have some mineral content. If good specimens from a known area warrant further investigation, a geologist from the Department of Mines and Resources is available to visit the locality and give advice. Prospecting and mining permits are issued by the Department and claims are registered.

Nova Scotia.—Under the provisions of the Mines Act (RSNS 1954, c. 179), the Government of Nova Scotia may assist a mining company or operator in the sinking of shafts, slopes, deeps and winzes and the driving of adits, tunnels, crosscuts, raises and levels. This assistance may take the form of work performed under contract, the payment of bills for materials and labour or the guarantee of bank loans. Any such work must be approved by the Department of Mines. The Government is also authorized to assist the mining industry to procure power on the most economical basis and may guarantee the Nova Scotia Power Commission against any loss of revenue incurred on account of capital investments made for that purpose. Mining machinery and equipment that may be

* Compiled from material supplied by the respective provincial governments.

used in searching for or testing and mining minerals may be made available through the government. Such equipment is under the direct supervision of the Chief Mining Engineer.

The Government of Nova Scotia is also empowered to make any regulations considered necessary for increasing the output of coal. Such regulations cover the appropriation, on payment, of unworked coal lands, the operation of coal mines, and loans or guarantees for loans. Close co-operation is maintained with the Federal Government in carrying out federal regulations made to secure increased production and economical distribution of coal from the mines of the province.

New Brunswick.—There are five divisions under the Mines Branch of the Department of Lands and Mines. The *Mineral Lands Division* administers the disposition of Crown mineral rights including the issuing of prospecting licences, recording of mining claims, issuing of mining licences and leases and other matters pertaining thereto. Detailed and index claim maps are prepared for distribution. The *Mine Inspection and Engineering Division* administers the safety regulations governing operations under the Mining Act. Regular inspections of all mines are performed. Laboratory facilities are maintained. It is the responsibility of this Division to approve equipment used in mines. The *Geological Division* carries on general and detailed geological mapping and investigation. Maps and reports are prepared for distribution. Mineral and rock specimens are examined for prospectors. Preliminary examinations of mineral prospects are performed where requested and circumstances warrant. The *Mine Assessment Division* is responsible for collection of mining tax and royalties and preparation of statistics concerning mineral production. The *Bathurst Division* serves as recording office for northeastern New Brunswick. In addition, claim maps as well as topographical, geological and aeromagnetic maps are available for perusal and distribution. The staff is prepared to provide information concerning the Mining Act and the use of various types of maps.

Quebec.—The Mining Act (RSQ 1941, c. 196) authorizes the Quebec Department of Mines to build, maintain and improve roads needed for mining development. Such work is done by contract under the supervision of departmental engineers. The Act gives the Department considerable latitude in this respect. Certain major roads have been built to new mining districts and completely paid for; on the other hand, if a particular property requires a branch road from an established highway the owner may be required to contribute a portion of the cost. To prevent the development of uncontrolled settlements in the vicinity of operating mines the Department regulates the use of land and permits the establishment of well organized communities. The municipal organization of such communities is administered by the Department of Municipal Affairs.

The Department maintains well equipped laboratories for the benefit of prospectors, geologists, engineers and mine operators. The facilities include equipment for mineralogy, petrography, ore dressing, and analysis by wet or dry assay, spectrography or X-ray. Qualitative and mineralogical determinations are made free of charge but quantitative analyses are charged for, according to a tariff schedule. The Mining Act provides free coupons to be used by prospectors in paying for such analyses.

The province has authorized the establishment of research laboratories to assist mining and metallurgical enterprises in the processes and techniques of extracting, transforming and utilizing ores.

The Department undertakes geological mapping and inspection. The work is divided between two branches, one responsible for reconnaissance (areal) mapping, and the other doing detailed mapping in mining districts and inspection of individual deposits or properties. Field parties are headed by geologists or mining engineers. The published reports on these investigations are distributed free upon request. During the field season about 35 parties are maintained in different sections of the province. Offices, in charge of resident

geologists, are maintained in mining districts to collect, preserve and compile geological information disclosed by mining explorations and individual sheets of the compilations are made available to the public.

The Department employs inspectors whose duties are concerned almost exclusively with the safety of workmen in operating mines. Three Mobile Mine Rescue Stations are operated and a mine rescue training program is conducted throughout the province.

In the field of education for prospectors, five-week courses are organized each year at Laval and Montreal Universities. University scholarships are granted each year to deserving undergraduate and postgraduate students in mining, geology and metallurgy, thus contributing to the training of qualified engineers for the benefit of the mining industry. Lectures are given to prospectors at different localities throughout the province.

Ontario.—The Ontario Department of Mines renders a multiplicity of services of direct assistance to the mining industry within the province, as briefly outlined below.

Mining Lands Branch.—This Branch handles all matters dealing with the recording of mining claims, assessment work, etc., and the final issuance of title to mining lands. As a service to the mining public, individual township maps are prepared and kept up to date showing lands open for staking and recorded and patented claims therein. As new surveys are made or later data become available, maps are revised in keeping with such information. District Mining Recorders maintain offices at strategic locations throughout the province.

Geological Branch.—A continuing program of geological mapping and investigation is carried out by the geological staff of the Department. Detailed reports and geological maps of the areas studied are made available to the public. In many of the active areas of the province resident geologists are engaged to gather and make available to the public information concerning geological conditions, exploration and development within their respective districts. One geologist specializing in industrial minerals is maintained on the staff to examine deposits of this type, to investigate methods of treatment and recovery of such minerals and to compile data on the uses, specifications and markets for such products. Collection and dissemination of information on groundwater resources is also a function of the Geological Branch. During the winter months, courses of instruction for prospectors are held in various centres throughout the province.

Laboratories Branch.—The Provincial Assay Office located in the East Block of the Parliament Buildings, Toronto, carries out wet analyses and assays of metal and rock constituents on a custom fee basis and also renders the same service free of charge to holders of valid assay coupons issued for the performance of assessment work on mining claims. The Timiskaming Testing Laboratories situated at Cobalt, in addition to performing fire assays and chemical analyses, conducts a bulk sampling plant mainly to assist the producers of the area in the marketing of the cobalt-silver ores. A Cable Testing Laboratory, wherein all hoisting ropes in use at the mines are periodically tested, is operated under the supervision of the Inspection Branch.

Inspection Branch.—The main function of this Branch is the regular examination of all operating mines, quarries, sand and gravel pits and certain metallurgical works with a view to ensuring proper conditions of health and safety to the men employed. District offices to serve the local areas are maintained in the major mining centres of the province. Mine rescue stations in the principal mining sections are operated under the supervision of the Inspection Branch.

Exhibitions.—The Department each year presents displays pertaining to mining within the province at such exhibitions as the Canadian National at Toronto and at other centres from time to time.

Publications Branch.—All maps and reports of the Department are distributed through the agency of the Publications Branch located at the main office of the Department.

Library.—A mining library for the use of the Department and the public is maintained within the Department. This library stocks mainly publications and maps issued by the federal and provincial governments of Canada as well as numerous periodicals and bulletins from the United States.

Mining and Access Roads.—In 1951 the Department of Mines undertook a program of road construction in the mineralized areas of the province, to open them for prospecting and development and to facilitate the actual operation of mining enterprises. When the importance of this program in its relation to the whole development of northern Ontario became apparent, the Government decided that its scope should be widened and, with that end in view, an interdepartmental committee was set up early in 1955 to decide on matters of policy and to determine the locations and priorities of the proposed roads. The Minister of Mines sits on this committee with the Ministers of Lands and Forests, of Treasury, and of Highways.

The Department of Highways supervises the construction of all access roads. Certain roads may be subsidized while others may be financed solely by Department of Mines funds. The sum of \$1,500,000 a year has been made available for these projects.

Manitoba.—The Mines Branch of the Manitoba Department of Mines and Natural Resources offers five main services of assistance to the mining industry: maintenance, by the Mining Recorder's offices at Winnipeg and The Pas, of all records essential to the granting and retention of titles to every mineral location in Manitoba; compilation, by the geological staff of the Branch, of historical and current information pertinent to mineral occurrences of interest and expansion of this information by a continuing program of geological mapping; enforcement of mine safety regulations and, by collaboration with industry, introduction of new practices such as those concerned with mine ventilation and the training of mine rescue crews which contribute to the health and welfare of mine workers; and maintenance of a chemical and assay laboratory to assist the prospector and the professional man in the classification of rocks and minerals and the evaluation of mineral occurrences.

Manitoba also aids the mining industry by the construction of access roads to mining districts.

Saskatchewan.—Assistance to the mining industry in Saskatchewan is administered by the Mines Branch, Department of Mineral Resources, with its head office at Regina. This Branch is headed by a Director and comprises three divisions.

The Geology Division is directed by the Chief Geologist, and maintains resident geologists in or near the principal mining areas. The Division conducts a prospectors' school which gives basic training in geology, mineralogy, prospecting and exploration techniques and administers the Prospectors' Assistance Plan which assists by lending equipment, paying certain transportation costs, paying for a grub-stake, and by providing technical advice. During the summer months, geological crews survey and map areas and prepare reports which are made available to the public. In 1957 and 1958 magnetometer and electro-magnetic surveys were conducted on approximately 3,000 sq. miles of the Precambrian area.

The Engineering Division administers the Mines Regulation Act, the purpose of which is to ensure safe working conditions in mines. Inspections of mines are carried out by division officers, a Chief Engineer of Mines stationed at Regina, and an Inspector of Mines stationed at Uranium City. Safety education is also part of the Division's work, taking the form of first aid instruction, mine rescue training, and analysis of accidents.

The Mining Lands Division is responsible for making disposition of all Crown minerals with the exception of petroleum and natural gas, and maintains records respecting areas let out by lease, permit or claim. Recording offices, having the responsibility of assisting the public in determining the lands available and accepting applications, are located at Regina, Prince Albert, La Ronge, Uranium City and Flin Flon.

Alberta.—Alberta Government assistance to the mining industry is diversified in character. The Mines Division of the Department of Mines and Minerals regulates coal mines and quarries and maintains standards of safety by inspection and certification of workers. The Workmen's Compensation Board also maintains safety standards and trains mine rescue crews. The oil and gas industries are served in a similar way by the Oil and Gas Conservation Board. Its regulatory measures, however, are also concerned with preventing the waste of oil and gas resources and with giving each owner of oil and gas rights the opportunity of obtaining a fair share of production. This Board compiles periodic reports and annual records which are of invaluable assistance in oil development in Alberta. The mining industry is also served by the Research Council of Alberta which has made geological surveys of most of the province and has carried forward projects concerned with the uses and development of minerals. The Council has studied the occurrence, uses and analyses of Alberta coals and their particular chemical and physical properties, the use of coals in the generation of power, the upgrading and the cleaning of coal and has also studied briquetting, blending, abrasion loss, shatter and crushing strength, asphalt binders and dust-proofing of coal. Studies have been made of glass sands, salt, fertilizers, cement manufacture and brick and tile manufacture.

The province from time to time has had commissions examine various aspects of the mining industry when it has considered that their findings would be of assistance in developing such industries. The province, together with the Canadian Association of Oil Well Drilling Contractors and the Western Canada Petroleum Association, maintains a detailed supervisory and safety training program concerned with the drilling of oil and gas wells. Of assistance also to mining companies and oil companies are the special deductions provided for in the Alberta Corporation Income Tax Act. These follow the parallel provisions in the federal Income Tax Act.

British Columbia.—The Department of Mines of British Columbia provides the following services: detailed geological mapping as a supplement to the work of the Geological Survey of Canada; free assaying and analytical work for prospectors registered with the Department; assistance to the prospector in the field by departmental engineers and geologists; grub-stakes, limited to a maximum of \$500, for prospectors; assistance in the construction of mining roads and trails; and inspection of mines to ensure safe operating conditions.

Section 3.—Mining Legislation

Federal Mining Laws and Regulations.*—The Federal Government administers mining laws in the Yukon and Northwest Territories, as well as those within Indian reserves.

Mining Acts and Regulations applicable to the Territories are administered by the Resources Division of the Northern Administration Branch, Department of Northern Affairs and National Resources. Minerals underlying federal land under grant are reserved to the Crown and mining rights may be acquired by staking mineral claims under the appropriate Act or Regulations. Twenty-one-year leases of claims may be issued and these leases are renewable.

The disposal of minerals underlying an Indian reserve is subject to the consent of the Indians occupying the reserve and to treaties relating thereto.

Early in 1960, changes in oil and gas regulations opened new areas to development and guaranteed to Canadians an opportunity to benefit financially in such development. In the past, the Territorial Oil and Gas Regulations applied only to the Northwest Territories

* The Acts and Regulations governing mining and quarrying on federal lands are summarized in Report No. 854, entitled *Digest of the Mining Laws of Canada*, issued by the Mines Branch, Department of Mines and Technical Surveys, Ottawa. Copies of individual Acts and Regulations may be obtained from the Resources Division, Northern Administration Branch, Department of Northern Affairs and National Resources, Ottawa. Also of interest in connection with mining regulations is a publication entitled *Summary Review of Federal Taxation and Certain Other Federal Legislation Affecting Mining, Oil and Natural Gas Enterprises in Canada*, obtainable from the Department of Mines and Technical Surveys.

and Yukon Territory; the revised legislation includes provision for the exploration and development of lands underlying the territorial waters of Canada wherever these are within federal jurisdiction.

The regulations remain largely the same in detail but two important new clauses concerning Canadian participation in financing and ownership are added at the lease stage: (1) no lease will be granted to an individual unless the Minister of Northern Affairs and National Resources is satisfied that the lessee is a Canadian citizen and will be the beneficial owner of the interest that will be granted; and (2) as far as companies are concerned, the regulations require that oil companies, to obtain a lease, must be incorporated in Canada and must make their shares available to Canadians by listing on recognized Canadian stock exchanges or show that Canadian citizens are the beneficial owners of at least half the issued equity stock.

The extra time and cost involved in Arctic exploration and development are recognized by other new provisions that apply to the Far North, including the extension of the life of exploration permits from nine to twelve years and the doubling in size of permit areas.

Provincial Mining Laws and Regulations.*—All Crown mineral lands lying within the boundaries of the several provinces (with the exception of those within Indian reserves and National Parks which are under the jurisdiction of the Federal Government) are administered by the respective provincial governments.

The granting of land in any province except Ontario and Nova Scotia no longer carries with it mining rights upon or under such land. In Ontario mineral rights are expressly reserved if they are not to be included. In Nova Scotia all minerals belong to the Crown except limestone, gypsum and building materials and, in granting land from the Crown, the right to these minerals goes with the title. In Newfoundland mineral and quarry rights are expressly reserved. Some early grants in British Columbia, Alberta, Saskatchewan, Manitoba, New Brunswick, Quebec and Newfoundland also included certain mineral rights. Otherwise mining rights must be separately obtained by lease or grant from the provincial authority administering the mining laws and regulations. Mining activities may be classified as placer, general minerals (or veined minerals and bedded minerals), fuels (coal, petroleum, gas) and quarrying. Provincial mining regulations under these divisions are summarized in the following paragraphs.

Placer.—In most provinces in which placer deposits occur there are regulations defining the size of placer holdings, the terms under which they may be acquired and held, and the royalties to be paid.

General Minerals.—These minerals are sometimes described as quartz, lode, or minerals in place. With the exception of British Columbia the most elaborate laws and regulations apply in this division. In all provinces except Alberta a prospector's or miner's licence, valid for one year, must be obtained to search for mineral deposits, the licence being general in some areas but limited in others. A claim of promising ground of a specified size may then be staked. This claim must be recorded within a time limit and payment of recording fees made except in Quebec where no fees are required. Work to a specified value per annum must be performed upon the claim for a period of up to ten years. There is no time limit in British Columbia but \$500 assessment work, of which a survey may represent two-fifths, must be performed and recorded before a lease may be obtained. In Quebec a specified number of man-days of work must be performed and the excess may be carried forward for renewals of licence; before mining can be commenced a mining concession must be purchased for which it is necessary to produce an engineer's report indicating the presence of an orebody. The taxation applied most frequently is a percentage of net profits of producing mines or royalties. In the Province of Newfoundland the provincial mining tax has been modified since Confederation on Mar. 31, 1949 to conform with the provincial obligations under the Dominion-Provincial Tax Agreement. No other form of taxation or royalty now exists.

* Compiled from material supplied by the provincial governments.

Fuels.—In provinces where coal occurs the size of holdings is laid down, together with the conditions of work and rental under which they may be held. In Quebec, ordinary mining claims give rights to all mineral substances and to their development, and stakings for combustible natural gas, salt, coal, mineral oil or naphtha, or iron sands may cover 1,280 acres per claim. Royalties are sometimes provided for. Acts or regulations govern methods of production. In the search for petroleum and natural gas an exploration permit or reservation is usually required. However, in Manitoba, Saskatchewan, Alberta and British Columbia leases usually follow the exploration reservation whether or not any discovery of oil or gas is made. In Manitoba, Saskatchewan and Alberta, exploration costs are applicable in part on the first year's rental. In other provinces, the discovery of oil or gas is usually prerequisite to obtaining a lease or grant of a limited area, subject to carrying out drilling obligations and paying a rental, a fee, or a royalty on production.

Quarrying.—Regulations under this heading define the size of holdings and the terms of lease or grant. On Quebec private lands the quarry belongs to the owner; on Crown lands mineral rights belong to the Crown and may be obtained in accordance with the provisions of the law although the rights to exploit peat or marl must be obtained by special licence.

Copies of mining legislation including regulations and other details may be obtained from the provincial authorities concerned.

Section 4.—Statistics of Mineral Production

The importance of mineral production compared with other primary industries in Canada is indicated in Chapter XVI and its part in the foreign trade of Canada is dealt with in Chapter XXI.

Subsection 1.—Value and Volume of Mineral Production

Statistics of the annual value of mineral production are available from 1886, total production being shown for five-year intervals from that date to 1945 and annually for subsequent years in Table 1. These figures are not strictly comparable throughout the period because of minor changes in methods of computing metallic content of ores sold and valuations of products but they do serve to show broad trends in the mineral industry.

The increase in the value of mineral production since the end of World War II has been phenomenal, having more than tripled since 1947. Production per head of the population advanced from \$51.38 in that year to \$137.01 in 1959. Although part of this increase was accounted for by advanced prices, the index of the volume of output from Canadian mines recorded an advance from 78.5 (1949 = 100) to 251.6 in the same comparison.

1.—Value of Mineral Production, 1886-1959

Year	Total Value	Value per Capita	Year	Total Value	Value per Capita	Year	Total Value	Value per Capita
	\$	\$		\$	\$		\$	\$
1886.....	10,221,255	2.23	1930.....	270,873,573	27.42	1951.....	1,245,483,595	88.33
1890.....	16,763,353	3.51	1935 ¹	312,344,457	28.80	1952.....	1,285,342,353	89.07
1895.....	20,505,917	4.08	1940.....	529,825,036	46.55	1953.....	1,336,303,503	90.40
1900.....	64,420,877	12.15	1945.....	498,755,181	41.32	1954.....	1,488,382,091	96.59
1905.....	69,078,999	11.51	1946.....	502,816,251	40.91	1955.....	1,795,310,796	114.37
1910.....	106,823,623	15.29	1947.....	644,869,975	51.38	1956.....	2,084,905,554	129.35
1915.....	137,109,171	17.18	1948.....	820,248,865	63.97	1957.....	2,190,322,392	132.03
1920.....	227,859,665	26.63	1949 ²	901,110,026	67.01	1958.....	2,100,739,038	123.22
1925.....	226,583,333	24.38	1950.....	1,045,450,073	76.24	1959 ²	2,389,683,279	137.01

¹ Beginning with 1935, exchange equalization on gold production is included. production included from 1949.

² Value of Newfoundland

Current Production.—A general review of mineral production during 1958 and 1959 is given at pp. 537-557. As stated there, the value of mineral commodities produced reached a new high in 1959 when it amounted to almost \$2,390,000,000. This was an increase of 13.7 p.c. over the value of \$2,101,000,000 in 1958 and of 9.1 p.c. over the previous peak of \$2,190,000,000 attained in 1957. The greatest gains over 1958 were: nickel, \$63,000,000; iron ore, \$60,000,000; copper, \$59,000,000; uranium, \$45,000,000; petroleum, \$28,000,000; and asbestos, \$14,000,000.

The value of all metals produced amounted to \$1,359,000,000 compared with \$1,130,000,000 in 1958. Uranium retained first place among them with a value of over \$324,000,000 and nickel second place with a value of \$257,000,000. An increase in both tonnage and price brought the value of copper up to \$233,000,000. Iron ore shipments, amounting to 24,500,000 tons valued at \$186,000,000, attained a new high. Less gold was produced and the price was lower but silver gained slightly in both quantity and value. Lead and zinc producers reduced their shipments to an over-supplied market, although the value of zinc increased by 4.4 p.c.

The non-metallic group of minerals also increased in value—from \$150,000,000 in 1958 to \$176,000,000 in 1959. The major contributions to the advance were made by asbestos, the quantity of which exceeded 1,000,000 tons for the first time and the value of which reached \$106,600,000. Crude gypsum output in the Maritime Provinces increased substantially, the value showing a 71.3-p.c. increase. Output of salt, augmented by the production of two new mines, increased 36.1 p.c. in volume to exceed 3,200,000 tons and 16.5 p.c. in value to \$17,462,000.

The value of mineral fuels produced was \$540,100,000, an increase of about \$30,000,000 over 1958. Crude petroleum amounted to nearly 185,000,000 bbl. and there were 428,000,000 cu. feet of natural gas utilized. Coal shipments, on the other hand, declined by over 1,000,000 tons.

Structural materials were produced at about the same level as in recent preceding years. An upward trend was noticeable in clay products, sand and gravel but stone output moved downward.

2.—Quantity and Value of Minerals Produced, 1957-59

Mineral	1957		1958		1959 ^p	
	Quantity	Value	Quantity	Value	Quantity	Value
		\$		\$		\$
Metallics.....	...	1,159,579,226	...	1,130,160,395	...	1,359,032,024
Antimony..... lb.	1,360,731	370,442	858,633	284,208	1,614,000	516,126
Bismuth..... "	319,941	584,917	412,792	771,267	415,909	883,296
Cadmium..... "	2,368,130	4,025,821	1,756,050	2,669,195	2,059,731	2,636,456
Calcium..... "	221,225	282,378	25,227	31,255	71,610	82,197
Cobalt..... "	3,922,649	7,784,423	2,710,429	5,308,293	3,298,328	5,927,003
Copper..... "	718,213,535	206,897,988	690,227,408	174,430,930	789,785,183	233,296,375
Copper..... oz. t.	4,433,894	148,757,143	4,571,347	155,334,370	4,444,845	149,213,447
Gold..... "	384,360	693,770	—	—	—	—
Indium..... "	22,272,174	167,221,425	15,726,323	128,131,181	24,477,004	186,206,552
Iron ore..... ton	187,529	10,083,434	—	5,120,620	—	7,587,000
Iron, remelt..... "	362,968,529	50,670,407	373,360,966	42,413,805	372,989,560	39,574,191
Lead..... lb.	16,770,371	5,254,896	13,591,705	4,064,825	11,633,213	3,489,984
Magnesium..... "	783,739	1,166,557	888,264	1,152,338	850,000	1,105,000
Molybdenum..... "	375,916,551	258,977,309	279,117,422	194,142,019	370,246,434	257,173,340
Nickel..... "	—	—	—	—	—	—
Palladium, iridium, etc..... oz. t.	216,582	7,896,209	154,366	4,840,072	170,160	5,662,499
Platinum..... "	199,565	17,835,124	146,092	9,481,371	149,510	10,951,608
Selenium..... lb.	321,392	3,535,312	306,990	2,302,426	564,415	3,849,905
Silver..... oz. t.	28,823,298	25,182,915	31,163,470	27,053,007	32,329,137	28,381,750
Tellurium..... lb.	51,524	55,167	38,250	65,025	96,954	208,401
Thorium..... "	—	—	—	—	54,037	116,141
Tin..... "	709,102	580,342	795,496	625,260	896,000	931,840
Titanium ore..... ton	10,770	97,075	—	—	24,000	126,000
Tungsten (WO ₃)..... lb.	1,921,413	5,279,275	690,976	1,898,455	—	—
Uranium (U ₃ O ₈)..... "	13,271,414	136,304,354	26,805,232	279,538,471	30,993,754	324,549,609
Zinc..... "	827,481,656	100,042,533	850,197,572	92,501,496	788,916,041	96,563,324

2.—Quantity and Value of Minerals Produced, 1957-59—concluded

Mineral	1957		1958		1959 ^a	
	Quantity	Value \$	Quantity	Value \$	Quantity	Value \$
Non-metallies.....	...	169,061,110	...	150,354,802	...	176,229,668
Arsenious oxide.....	lb. ...	137,112	2,323,320	94,542	1,887,886	90,783
Asbestos.....	ton 1,046,086	104,489,431	925,331	92,276,748	1,042,253	106,591,686
Barite.....	" 228,048	2,992,913	195,719	2,199,384	255,023	2,514,338
Diatomite.....	" 120	2,400	27	540	...	...
Feldspar.....	" 20,450	393,284	20,387	359,966	17,762	286,362
Fluorspar.....	" 66,245	1,756,841	...	1,542,589	...	2,084,387
Gypsum.....	" 4,577,492	7,745,105	3,964,129	5,189,159	5,941,323	8,889,748
Iron oxide.....	" 7,518	187,211	1,632	113,390	1,220	108,765
Lithia.....	lb. 5,140,257	2,827,143	3,853,322	2,047,880	2,497,613	1,537,000
Magnesian dolomite and brucite.....	...	3,046,298	...	2,529,161	...	2,994,331
Mica.....	lb. 1,282,416	111,583	1,504,933	89,651	738,271	52,778
Mineral water.....	gal. 348,710	185,167	316,727	172,568	317,400	172,000
Nepheline syenite.....	ton 200,016	2,754,060	201,306	2,613,446	230,712	2,908,593
Peat moss.....	" 137,747	4,734,504	149,013	4,778,860	181,120	6,128,254
Potash (K ₂ O).....	...	...	...	...	...	840,000
Pyrite, pyrrhotite.....	ton 1,166,416	4,808,228	1,191,731	4,248,668	1,051,873	3,213,814
Quartz.....	" 2,139,246	3,185,186	1,453,656	2,538,150	1,934,513	2,994,867
Salt.....	" 1,771,556	13,989,703	2,375,192	14,989,542	3,233,512	17,462,050
Silica brick.....	M 4,308	655,903	2,815	472,346	1,904	345,871
Soapstone, talc and pyrophyllite.....	ton 34,725	427,673	35,405	429,136	38,884	481,286
Sodium sulphate.....	" 157,800	2,568,728	173,217	2,862,915	171,000	2,775,758
Sulphur in smelter gas.....	" 235,123	2,322,067	241,055	2,361,252	278,204	2,718,290
Sulphur, elemental.....	" ...	...	94,377	1,872,832	142,970	2,675,387
Titanium dioxide, etc.....	" 186,422	9,740,570	...	6,575,077	...	8,363,320
Fuels.....	...	564,776,791	...	510,768,681	...	540,105,930
Coal.....	ton 13,189,155	90,220,670	11,687,110	79,963,327	10,597,255	73,056,903
Natural gas.....	M cu. ft. 220,006,682	20,962,501	337,803,726	32,057,536	427,804,000	40,098,850
Petroleum, crude.....	bbl. 181,848,004	453,593,620	165,496,196	398,747,818	184,593,000	426,950,227
Structural Materials.....	...	296,905,265	...	309,455,160	...	314,315,607
Clay products (brick, tile, etc.).....	...	35,922,158	...	41,709,903	...	45,185,849
Cement.....	ton 6,049,098	93,167,477	6,153,421	96,414,142	6,296,010	97,889,446
Lime.....	" 1,378,617	16,678,614	1,596,422	19,465,823	1,668,230	19,707,437
Sand and gravel.....	" 159,829,512	91,939,354	160,210,945	96,282,363	177,765,382	100,366,015
Stone.....	" 40,282,081	59,197,662	38,156,647	55,582,929	37,474,029	51,166,860
Grand Totals.....	...	2,190,322,392	...	2,100,739,038	...	2,389,683,279

Analysis of Current Value and Volume.—To assist in clearer and simpler interpretation of the trends in mineral production in Canada over the ten years 1950-59, the percentage of the total value contributed by each principal mineral in each year is given in Table 3. Values upon which percentages in this table are based are the annual values of mineral production, expressed in Canadian currency, as shown in Tables 1 and 2.

3.—Percentage of the Total Value Contributed by Principal Minerals, 1950-59

Mineral	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959 ^a
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Metallies¹	59.0	59.9	56.7	53.1	53.7	56.1	54.9	52.9	53.8	56.9
Copper.....	11.8	11.9	11.4	11.3	11.8	13.4	14.1	9.4	8.3	9.8
Gold.....	16.2	13.0	11.9	10.4	10.0	8.7	7.3	6.8	7.4	6.2
Iron ore.....	3.8	4.2	4.6	6.2	6.2	6.2	7.6	7.6	6.0	7.8
Lead.....	4.6	4.7	4.3	3.7	3.9	3.2	2.8	2.3	2.0	1.6
Nickel.....	10.7	12.1	11.8	12.0	12.1	12.0	10.8	11.8	9.2	10.8
Platinum metals.....	1.7	1.8	1.4	1.5	1.4	1.3	1.1	1.2	0.7	0.7
Silver.....	1.8	1.8	1.6	1.8	1.7	1.4	1.2	1.1	1.3	1.2
Uranium.....	...	...	...	...	1.8	1.4	2.2	6.2	13.3	13.6
Zinc.....	9.4	10.9	10.1	7.2	6.1	6.6	6.1	4.6	4.4	4.0

¹ Includes minor items not specified.

3.—Percentage of the Total Value Contributed by Principal Minerals, 1950-59—concluded

Mineral	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959 ^P
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Non-metallics¹	9.0	9.3	9.7	9.4	8.8	8.1	8.3	7.7	7.2	7.4
Asbestos	6.3	6.5	6.9	6.4	5.8	5.4	5.3	4.8	4.4	4.5
Gypsum	0.6	0.5	0.5	0.6	0.5	0.4	0.4	0.4	0.3	0.4
Quartz	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
Salt	0.7	0.6	0.6	0.5	0.6	0.6	0.7	0.6	0.7	0.7
Sulphur	0.2	0.2	0.3	0.2	0.3	0.3	0.4	0.1	0.2	0.2
Fuels	19.2	18.7	20.4	23.5	23.7	23.1	24.9	25.8	24.3	22.6
Coal	10.5	8.7	8.6	7.7	6.5	5.2	4.6	4.1	3.8	3.1
Natural gas	0.6	0.6	0.7	0.8	0.8	0.9	0.9	1.0	1.5	1.7
Petroleum	8.1	9.4	11.1	15.0	16.4	17.0	19.4	20.7	19.0	17.8
Structural Materials	12.7	12.1	13.1	14.0	13.8	12.7	11.9	13.6	14.7	13.1
Clay products	2.1	1.9	1.9	2.2	2.2	2.0	1.8	1.6	2.0	1.9
Cement	3.4	3.2	3.7	4.4	4.0	3.6	3.8	4.3	4.6	4.1
Lime	1.2	1.1	1.1	1.1	1.0	0.9	0.7	0.8	0.9	0.8
Sand and gravel	3.5	3.6	4.0	4.0	4.0	3.8	3.5	4.2	4.6	4.2
Stone	2.5	2.3	2.4	2.3	2.6	2.4	2.1	2.7	2.6	2.1
Grand Totals	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

¹ Includes minor items not specified.

On the basis of 1949 production levels equalling 100, the total volume of mineral output* had increased by 1959 to 251.6, reflecting substantial advances in the output of natural gas, crude petroleum, iron ore and uranium, with lesser advances in copper, nickel, gold and asbestos. Coal was the only major mineral to register an over-all decline since 1949.

4.—Indexes of the Volume of Production of the Principal Mining Industries, 1950-59

(1949=100)

NOTE.—The index of the volume of mineral output has been revised since the publication of the 1959 Canada Year Book and placed on the basis of 1949=100. Figures comparable to those given in this table for 1935-49 may be obtained from the publication mentioned in the footnote to this page.

Mineral	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
Metallics	103.5	107.9	110.3	115.7	129.0	142.7	151.0	170.0	180.3	201.3
Copper ¹	100.4	102.5	98.0	96.1	114.8	123.7	135.2	137.1	131.8	151.6
Gold ¹	107.7	106.6	108.5	98.5	105.8	110.2	107.9	106.7	109.7	108.4
Nickel ¹	96.2	107.1	109.2	111.7	125.3	135.9	139.0	146.8	110.2	144.8
Iron ore	96.0	115.9	126.5	170.6	185.4	316.5	418.6	462.6	322.3	448.9
Non-metallics	139.1	156.3	155.5	152.9	161.4	180.2	187.6	179.0	163.3	194.1
Asbestos	151.8	170.7	171.5	162.3	167.8	191.9	188.4	184.3	168.7	196.9
Fuels	112.1	143.5	163.9	192.7	215.6	273.2	344.7	358.2	330.7	364.3
Coal	98.5	95.6	90.5	81.5	75.2	74.1	76.6	65.4	56.7	51.9
Natural gas	107.3	120.5	128.9	147.8	169.6	204.5	235.0	295.1	433.7	538.0
Petroleum	135.5	226.9	291.8	385.5	457.8	616.8	812.7	869.5	782.6	873.3
Total Mining	109.5	123.4	131.0	142.1	158.7	185.2	212.3	227.8	226.8	251.6

¹ Based on commodity data.**Subsection 2.—Provincial Distribution of Mineral Production**

The increase in mineral production was general across the country except in Nova Scotia and the Northwest Territories. Lower output of coal brought the Nova Scotia total down and declines in uranium and oil affected the value of output in the Northwest Territories.

* For a description of this index, as well as one for manufacturing and electric power and gas utilities, see DBS Reference Paper *Revised Index of Industrial Production, 1935-1957 (1949=100)* (Catalogue No. 61-502).

Ontario again led the provinces in mineral output, producing 40.3 p.c. of the total in 1959 and increasing its contribution from 37.6 p.c. in 1958 and 34.2 p.c. in 1957. The value rate of increase within the province was 22.9 p.c. in 1959 compared with 5.4 p.c. in 1958 and 16.8 p.c. in 1957. The greatest gains in value were made by copper, which rose by 54.5 p.c., nickel which increased by 35.7 p.c., iron ore by 31.6 p.c. and uranium by 25.1 p.c. Quebec remained in second place, advancing its contribution to 18.1 p.c. of the total Canadian output from 17.5 p.c. in 1958 mainly as a result of higher production of iron ore and copper. Alberta followed in third place with 15.8 p.c. of the total, a slightly lower proportion than its 16.0 p.c. in 1958. The increase in value of output in the province amounted to 9.3 p.c., mainly contributed by the fuels. Saskatchewan continued in fourth place, although its contribution declined from 10.1 p.c. of the total in 1958 to 8.9 p.c. in 1959. The value of uranium output dropped somewhat in this province but the decrease was more than compensated for by increases in oil, gas and coal as well as by the addition of the first production of potash. Value of production for the province was therefore 1.8 p.c. higher than in 1958. British Columbia's share of the total at 6.6 p.c. was also lower in 1959, its output increasing only 4.1 p.c. Moderately higher values of most minerals were offset by decreases in gold, lead, nickel, tungsten and coal.

Newfoundland's contribution to the total Canadian output remained at 3.0 p.c. in 1959, although the province recorded a 11.1-p.c. gain contributed mainly by iron ore, copper and structural materials. Value of mineral output in Manitoba moved only moderately upward—by 1.4 p.c. In that province increases in zinc and copper were offset to some extent by a decrease in gold. In New Brunswick value of output increased by 13.0 p.c.; metal production ceased entirely but the value of coal and structural materials advanced considerably. As stated above, Nova Scotia and the Northwest Territories showed the only over-all decreases in value of mineral output in 1959 as compared with 1958. In the latest year, Nova Scotia contributed 2.5 p.c. of the Canadian total and the Northwest Territories 1.5 p.c.

5.—Value of Mineral Production, by Province, 1950-59

NOTE.—Figures from 1899 are given in the corresponding table of previous Year Books beginning with the 1933 edition.

Year	Newfoundland	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba
	\$	\$	\$	\$	\$	\$
1950.....	25,824,047	59,482,173	12,756,975	220,176,517	366,801,525	32,691,173
1951.....	32,410,443	59,727,256	9,564,617	255,530,071	444,667,203	30,045,992
1952.....	32,512,313	64,552,383	11,298,960	270,483,962	444,669,412	25,105,045
1953.....	33,780,622	67,364,408	11,663,618	251,881,781	465,877,093	25,264,112
1954.....	42,898,033	73,450,898	12,468,322	278,818,070	496,747,571	35,106,922
1955.....	68,462,956	67,133,539	15,759,744	357,010,045	583,954,682	62,018,231
1956.....	84,349,006	66,092,274	18,258,302	422,464,410	650,823,362	67,909,407
1957.....	82,682,263	68,066,743	23,120,689	406,055,757	748,824,322	63,464,285
1958.....	64,994,754	62,706,891	16,275,971	365,706,489	789,601,868	57,217,569
1959.....	72,306,838	59,485,519	18,390,985	432,819,808	962,757,451	58,066,665
	Saskatchewan	Alberta	British Columbia	Northwest Territories	Yukon Territory	Canada
	\$	\$	\$	\$	\$	\$
1950.....	35,983,923	135,758,940	138,888,205	8,050,899	9,035,696	1,045,450,073
1951.....	51,032,953	168,144,211	176,278,932	8,288,747	9,793,170	1,245,483,595
1952.....	49,506,094	196,811,654	170,071,244	8,944,835	11,386,451	1,285,342,353
1953.....	48,081,970	248,863,295	158,487,812	10,300,230	14,738,562	1,336,303,503
1954.....	68,216,009	279,042,735	158,630,867	26,414,000	16,588,664	1,488,382,091
1955.....	85,150,128	325,974,326	189,524,574	25,597,821	14,724,750	1,795,310,796
1956.....	122,744,698	411,171,898	203,277,828	22,157,935	15,656,434	2,084,905,554
1957.....	173,461,037	410,211,763	178,931,120	21,400,615	14,111,798	2,180,322,392
1958.....	209,940,966	345,939,248	151,149,136	24,895,390	12,310,756	2,100,739,038
1959.....	213,743,508	378,142,642	157,281,438	24,266,817	12,421,558	2,389,683,279

6.—Detailed Mineral Production, by Province, 1958 with Preliminary Totals for 1959

Mineral	Newfoundland	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon and Northwest Territories	CANADA	
											1958	1959P
Metallics \$	60,099,277	4,454	922,210	175,107,456	629,285,438	26,019,283	94,161,848	9,606	108,097,509	36,443,304	1,130,160,385	1,358,032,024
Antimony..... lb.	—	—	—	—	—	—	—	—	858,633	—	858,633	1,614,000
Bismuth..... lb.	—	—	—	240,177	18,581	—	—	—	284,208	—	284,208	516,126
Cadmium..... lb.	—	—	—	436,420	26,779	—	—	—	154,034	—	412,792	415,909
Calcium..... lb.	—	—	—	—	—	39,994	302,563	—	308,068	—	771,267	883,296
Cobalt..... lb.	—	—	—	—	25,227	60,791	489,941	—	1,252,724	160,739P	1,756,050	2,059,731
Copper..... lb.	—	—	—	—	31,256	—	—	—	1,904,140	244,323P	2,669,195	2,636,456
Cobalt..... lb.	—	—	—	—	2,436,064	274,365	—	—	—	—	31,256	71,610
Copper..... lb.	—	—	—	—	4,866,767	441,531	—	—	—	—	2,710,429	3,298,328
Gold..... oz.	20,501,858	—	655,717	262,890,590	284,099,476	25,201,421	75,020,217	—	12,019,726	868,403P	5,308,298	5,927,003
Gold..... ton	7,409,372	—	106,683	96,826,788	71,267,895	6,383,403	19,070,139	—	2,995,902	220,748P	690,227,408	789,785,183
Iron ore..... ton	454,686	131	32	32,074,846	2,716,514	87,356	86,590	282	210,612	411,583P	174,430,930	233,296,375
Iron ore..... ton	5,390,775	4,451	1,767	35,303,857	92,307,146	2,968,357	2,942,328	9,582	7,156,596	13,985,500P	4,571,347	4,444,845
Iron (remelt)..... ton	38,226,828	—	—	6,660,323	3,644,962	—	—	—	630,271	—	15,726,823	24,477,004
Lead..... lb.	—	—	—	46,898,490	36,861,421	—	—	—	4,193,442	—	126,131,181	186,206,552
Lead..... lb.	—	—	—	5,120,620	—	—	—	—	—	—	5,120,620	7,587,000
Magnesium..... lb.	47,960,729	—	188,179	6,200,475	2,513,294	—	—	—	294,833,165	21,566,194P	373,360,966	372,959,560
Magnesium..... lb.	5,438,339	—	21,377	7,715,620	295,562	—	—	—	33,493,047	2,449,920P	42,413,805	39,574,191
Molybdenum..... lb.	—	—	—	4,504,343	9,087,362	—	—	—	13,591,705	—	13,591,705	11,693,213
Nickel..... lb.	—	—	—	1,317,070	2,747,755	—	—	—	4,064,825	—	4,064,825	3,489,994
Nickel..... lb.	—	—	—	1,152,838	—	—	—	—	—	—	888,284	880,000
Palladium, rhodium, etc. oz. t.	—	—	—	254,286,784	19,555,669	—	—	—	1,408,490	3,866,479P	279,117,422	370,246,434
Platinum..... oz. t.	—	—	—	177,188,918	13,328,056	—	—	—	996,507	2,648,539P	194,142,019	257,173,340
Selenium..... lb.	—	—	—	—	154,366	—	—	—	—	—	154,366	170,160
Selenium..... lb.	—	—	—	—	4,840,072	—	—	—	—	—	4,840,072	5,662,499
Silver..... oz. t.	—	—	—	179,397	90,295	7,064	30,234	—	—	—	146,092	149,510
Tellurium..... lb.	—	—	—	1,345,478	677,213	52,980	226,755	—	—	—	9,481,371	10,981,608
Silver..... oz. t.	1,267,078	4	51,139	3,908,361	9,815,257	320,759	1,299,077	28	8,013,428	6,488,339P	2,306,990	3,899,905
Tellurium..... lb.	1,099,950	3	44,394	3,382,848	8,520,624	278,451	1,127,729	24	6,956,457	5,632,527P	21,363,457	32,939,757
	—	—	—	29,457	6,692	384	1,707	—	—	—	27,059,107	28,381,577
	—	—	—	50,077	11,376	670	2,902	—	—	—	38,250	68,054
	—	—	—	—	—	—	—	—	—	—	68,025	208,401

For footnotes, see end of table, p. 575.

Subsection 3.—Production of Metallic Minerals

The metallic minerals of greatest dollar value in Canada during 1959 were, in order: uranium, nickel, copper, iron ore, gold, zinc, lead and silver. This order remained unchanged from 1958, each of these metals, with the exception of gold and lead, having advanced considerably in value of production. The value of uranium produced was still well ahead of nickel, which was in second place, but its \$85,000,000 lead attained in 1958 was reduced to \$67,000,000. Developments taking place in metal mining during 1958 and 1959 are dealt with in Section 1 at pp. 538-548. The following statistical information gives a comparison of quantity and value figures for each of the principal metals over the ten-year period 1950-59.

Uranium.—Uranium mineralization has been found in Canada at intervals along the western and southern edges of the Canadian Shield but production is concentrated in four areas within this belt—Great Bear Lake in the Northwest Territories, Beaverlodge in northern Saskatchewan, and Elliot Lake and Bancroft in Ontario. Although output of uranium first began in the Northwest Territories in 1942, figures were not available until 1954 because of government restrictions. However, it is since that time that the large mines and mills of Saskatchewan and Ontario have come into production. Ontario in 1959 contributed 81 p.c. of the total value of production, the great mines and mills of the Elliot Lake area constituting the largest uranium-producing camp in the world.

7.—Production and Value of Uranium (U₃O₈), by Province, 1954-59

Year	Ontario		Saskatchewan		Northwest Territories		Canada	
	Quantity ¹	Value	Quantity ¹	Value	Quantity ¹	Value	Quantity ¹	Value
	lb.	\$	lb.	\$	lb.	\$	lb.	\$
1954.....	—	—	..	10,981,417	..	15,486,157	..	26,467,574
1955.....	..	487,054	..	12,312,471	..	13,232,079	..	26,031,604
1956.....	906,614	9,361,867	2,780,534	27,194,202	873,912	9,176,076	4,561,060	45,732,145
1957.....	7,970,598	82,940,763	4,462,552	44,561,832	838,264	8,801,769	13,271,414	136,304,364
1958.....	19,970,136	210,149,700	5,924,253	59,815,924	910,843	9,572,847	26,805,232	279,538,471
1959.....	24,797,206	262,917,645	5,351,145	54,068,000	845,403	7,563,964	30,993,754	324,549,609

¹ Figures for 1956 include radium salts, silver, cobalt and uranium oxides; figures for 1957-59 are for uranium oxide (U₃O₈).

Nickel.—The output of nickel reached an all-time high in 1957, both in quantity and value, dropped considerably in 1958 when a rise in world stocks brought about a decrease in nickel prices, but recovered in 1959 with output figures close to the 1957 level. About 93 p.c. of the 1959 production shown in Table 8 came from the Sudbury area of Ontario, about 5 p.c. from Lynn Lake in Manitoba and the remainder from Rankin Inlet on Hudson Bay in the Northwest Territories and from Hope, B.C.

Canada uses only about 4,000 tons of refined nickel annually. Exports amounted to 102,000 tons in 1959, mostly to the United States, and exports of nickel in matte, etc., amounted to 65,600 tons.

8.—Quantity and Value of Nickel Produced, 1950-59

NOTE.—Figures from 1889 are given in the corresponding table of previous Year Books beginning with the 1929 edition.

Year	Quantity	Value	Year	Quantity	Value
	tons	\$		tons	\$
1950.....	123,659	112,104,685	1955.....	174,928	215,866,007
1951.....	137,903	151,269,994	1956.....	178,515	222,204,880
1952.....	140,559	151,349,438	1957.....	187,958	258,977,309
1953.....	143,643	160,430,098	1958.....	139,559	194,142,019
1954.....	166,299	180,173,392	1959.....	185,123	257,173,340

Copper.—Although the quantity of copper produced in Canada reached its peak in 1959, the total value for that year was lower than that of smaller quantities produced in 1955 and 1956. Among the provinces, the only reduction in tonnage in 1959 was shown

by Saskatchewan. Increases in the other producing provinces ranged from 31.5 p.c. in Ontario to 1.9 p.c. in British Columbia.

9.—Copper Production, by Province, and Total Value 1950-59

NOTE.—Figures from 1886 are given in the corresponding table of previous Year Books beginning with the 1916-17 edition.

Year	Newfoundland	Quebec	Ontario	Manitoba	Saskatchewan	British Columbia	Canada	
							Quantity	Value
	tons	tons	tons	tons	tons	tons	tons	\$
1950.....	3,221	72,891	117,210	20,817	28,082	21,086	264,207	123,211,407
1951.....	2,899	68,866	128,808	15,839	31,625	21,932	269,970 ¹	149,026,216 ¹
1952.....	2,959	68,846	125,343	9,374	30,344	20,786	258,038 ²	148,679,040 ²
1953.....	2,814	54,920	130,582	9,411	30,588	24,148	253,252 ³	150,953,742 ³
1954.....	3,481	83,930	140,776	12,274	36,192	25,088	302,732 ⁴	175,712,693 ⁴
1955.....	3,052	101,021	146,407	19,379	32,945	22,127	325,994 ⁵	239,756,455 ⁵
1956.....	3,108	122,300	156,271	17,973	33,116	21,682	354,860 ⁶	292,958,091 ⁶
1957.....	4,536	112,409	171,703	18,551	30,597	15,510	359,109 ⁷	206,897,988 ⁷
1958.....	14,751	131,445	142,035	12,601	37,510	6,010	345,114 ⁸	174,430,930 ⁸
1959.....	15,777	136,839	186,747	12,872	36,096	6,124	394,893 ⁹	233,296,375 ⁹

¹ Includes one ton valued at \$536 produced in N.W.T.

² Includes 383 tons valued at \$218,663 produced in

Nova Scotia and three tons valued at \$1,969 produced in N.W.T. ³ Includes 788 tons valued at \$471,962 produced in Nova Scotia.

⁴ Includes 991 tons valued at \$577,868 produced in Nova Scotia.

⁵ Includes 1,028 tons

valued at \$757,758 produced in Nova Scotia and 35 tons valued at \$26,290 produced in New Brunswick.

⁶ Includes 404 tons valued at \$334,704 produced in Nova Scotia and 6 tons valued at \$5,272 produced in New Brunswick.

⁷ Includes 5,733 tons valued at \$3,322,400 produced in New Brunswick and 165 tons valued at \$95,672 produced in N.W.T.

⁸ Includes 328 tons valued at \$166,683 produced in New Brunswick and 434 tons valued at \$220,748 produced in N.W.T.

⁹ Includes 438 tons valued at \$259,000 produced in N.W.T.

Iron Ore.—Shipments of iron ore from Canadian mines, after a considerable setback in 1958, reached record levels in 1959. The increase in quantity over 1958 was 55.6 p.c. and in value 47.6 p.c. All producing provinces contributed to the advance, but Quebec, with 46.7 p.c. of the total production in 1959, increased its output by 88.7 p.c. Production in Ontario increased by 64.5 p.c. and Newfoundland by 14.9 p.c. These three provinces accounted for 96.5 p.c. of the total production and British Columbia for the remainder.

Production of pig-iron and of steel ingots and castings was also at record levels in 1959. Exports of iron, in the form of ore and concentrates, in 1959 amounted to 20,778,800 tons valued at \$157,814,000, compared with 13,878,272 tons valued at \$107,674,258 in 1958. Of the 1959 tonnage, 72.2 p.c. went to the United States and most of the remainder to Europe, mainly the United Kingdom. Japan received 731,961 tons.

10.—Iron Ore Shipments and Production of Pig-Iron, Ferro-Alloys and Steel Ingots and Castings, 1950-59

NOTE.—Figures from 1886 are given in the corresponding table of previous Year Books beginning with the 1936 edition.

Year	Iron Ore Shipments from Canadian Mines		Production of Pig-Iron			Production of Ferro-Alloys ¹	Production of Steel Ingots and Castings
	Quantity	Value	Nova Scotia	Ontario	Canada		
	tons	\$	tons	tons	tons	tons	tons
1950.....	3,605,261	23,413,547	513,029	1,804,092	2,317,121	180,499	3,383,575
1951.....	4,680,510	31,141,112	485,900	2,066,993	2,552,893	266,252	3,568,720
1952.....	5,271,849	33,744,311	395,262	2,286,323	2,681,585	232,117	3,703,111
1953.....	6,509,818	44,102,944	440,005	2,572,263	3,012,268	153,660	4,116,068
1954.....	7,361,598	49,666,507	314,297	1,896,732	2,211,029	116,141	3,195,030
1955.....	16,283,177	110,435,850	402,759	2,812,608	3,215,367	189,805	4,534,672
1956.....	22,348,278	160,362,118	466,306	3,101,897	3,568,203	240,480	5,301,202
1957.....	22,272,174	167,221,425	522,666	3,195,489	3,718,155	230,031	5,068,149 ²
1958.....	15,726,323	126,131,181	392,131	2,667,448	3,059,579	112,589	4,359,466
1959.....	24,477,004	186,206,552	..	..	4,181,794 ²	137,616	5,921,728

¹ Factory shipments since 1953.

² Total includes production reported for Quebec as well as Nova Scotia and Ontario.

Gold.—Over the ten-year period 1950-59, Canada's annual gold production has fluctuated narrowly between 4,000,000 oz. t. and 4,600,000 oz. t., and its value between \$140,000,000 and \$169,000,000. Estimates for 1959 show a slight decrease in the quantity produced as well as a decrease in value compared with 1958. The decrease was fairly general across the country following a reduction in the average price of gold. Ontario is by far the leading producer, accounting for 60.0 p.c. of the Canadian output in 1959, and Quebec holds second place with 22.2 p.c. of the total. Canada produced 11 p.c. of the world's output in 1959 and ranked as the second largest producer, following the Union of South Africa.

11.—Quantity and Value of Gold Produced, by Province, 1950-59

NOTE.—Values are calculated at world prices in Canadian funds. Figures from 1862 are given in the corresponding table of previous Year Books beginning with the 1916-17 edition.

Year	Newfoundland		Nova Scotia		Quebec		Ontario	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	oz. t.	\$	oz. t.	\$	oz. t.	\$	oz. t.	\$
1950.....	9,254	352,115	65	2,473	1,094,645	41,651,242	2,481,110	94,406,236
1951.....	8,515	313,778	17	626	1,067,306	39,330,226	2,462,979	90,760,776
1952.....	8,595	294,551	1,433	49,109	1,113,204	38,149,501	2,513,691	86,144,190
1953.....	7,654	263,451	3,248	111,796	1,021,698	35,166,845	2,182,437	75,119,481
1954.....	6,528	222,409	3,754	127,899	1,098,570	37,428,280	2,361,385	80,452,387
1955.....	6,337	218,753	3,880	133,938	1,154,522	39,854,099	2,523,040	87,095,340
1956.....	8,213	282,938	1,279	44,061	1,036,059	35,692,233	2,513,912	86,604,268
1957.....	9,755	327,280	45	1,510	1,006,895	33,781,327	2,578,206	86,498,811
1958.....	13,381	454,686	131	4,451	1,044,846	35,503,867	2,716,514	92,307,146
1959 ^a	13,518	453,799	50	1,678	985,829	33,094,280	2,666,535	89,515,580
	Manitoba		Saskatchewan		Alberta		British Columbia	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	oz. t.	\$	oz. t.	\$	oz. t.	\$	oz. t.	\$
1950.....	191,725	7,295,136	79,784	3,035,781	152	5,784	290,490	11,053,144
1951.....	163,914	6,040,231	110,216	4,061,460	97	3,574	289,992	10,686,205
1952.....	141,947	4,864,524	93,585	3,207,158	111	3,804	273,059	9,357,732
1953.....	131,309	4,519,656	88,327	3,040,215	65	2,237	264,976	9,120,474
1954.....	134,944	4,597,542	101,785	3,467,815	195	6,644	268,508	9,148,068
1955.....	123,888	4,276,614	83,580	2,885,182	214	7,387	252,979	8,732,835
1956.....	120,232	4,141,992	82,687	2,848,567	119	4,100	196,692	6,776,040
1957.....	120,008	4,026,268	75,236	2,524,168	416	13,957	229,113	7,686,741
1958.....	87,356	2,968,357	86,590	2,942,328	282	9,582	210,612	7,156,596
1959 ^a	61,711	1,735,938	80,694	2,708,898	187	6,278	178,749	6,000,604
	Northwest Territories		Yukon Territory		Canada			
Year	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
	oz. t.	\$	oz. t.	\$	oz. t.	\$	oz. t.	\$
1950.....	200,663	7,635,227	93,339	3,551,549	4,441,227	168,988,687		
1951.....	212,211	7,819,975	77,504	2,856,022	4,392,751	161,872,873		
1952.....	247,581	8,484,601	78,519	2,690,846	4,471,725	153,246,016		
1953.....	289,929	9,979,356	66,080	2,274,474	4,055,723	139,597,985		
1954.....	308,563	10,512,741	82,208	2,800,826	4,366,440	148,764,611		
1955.....	321,321	11,092,001	72,201	2,492,379	4,541,962	156,788,528		
1956.....	352,669	12,149,447	72,001	2,480,434	4,383,863	151,024,080		
1957.....	340,018	11,407,604	73,962	2,481,425	4,433,894 ¹	148,757,143 ¹		
1958.....	343,838	11,683,615	67,745	2,301,975	4,571,347 ²	155,334,370 ²		
1959 ^a	399,176	13,400,338	68,396	2,296,054	4,444,845	149,213,447		

¹ Includes 240 oz. t. of gold valued at \$8,052 produced in New Brunswick, valued at \$1,767 produced in New Brunswick.

² Includes 52 oz. t. of gold

Zinc.—The estimated production of zinc (including refined zinc, zinc ores and concentrates) in 1959 was the lowest since 1954. Compared with 1958, it dropped by 7.2 p.c. but a higher average price brought the value 4.4 p.c. above the 1958 level. British Columbia accounts for more than half the Canadian output—50.9 p.c. in 1959. Ontario was second in that year with 12.0 p.c., followed in order by Saskatchewan, Quebec, Newfoundland, Manitoba and the Yukon Territory. New Brunswick's one zinc producer ceased operations early in 1958.

12.—Quantity and Value of Zinc Produced, 1950-59

NOTE.—Figures from 1911 are given in the corresponding table of previous Year Books beginning with the 1939 edition.

Year	Quantity ¹	Value	Average Price per lb.	Year	Quantity ¹	Value	Average Price per lb.
	tons	\$	cts.		tons	\$	cts.
1950.....	313,227	98,040,145	15.65	1955.....	433,357	118,306,466	13.65
1951.....	341,112	135,762,643	19.90	1956.....	422,642	125,437,344	14.84
1952.....	371,802	129,833,285	17.46	1957.....	413,740	100,042,533	12.09
1953.....	401,762	96,101,386	11.96	1958.....	426,099	92,501,496	10.88
1954.....	376,491	90,207,285	11.98	1959 ^p	394,458	96,563,324	12.24

¹ Estimated foreign smelter recoveries and refined zinc produced in Canada.

Lead.—Lead production in 1959 in the form of refined pig and recoverable lead in ore and concentrates was approximately the same as in 1958, although lower prices affected the value, bringing it down by 6.7 p.c. Of the total production, British Columbia accounted for 296,758,890 tons or 79.6 p.c. The only lead refinery in Canada is located in that province at Trail. Silver-lead ores are mined at Keno Hill in Yukon Territory and lead also occurs in the complex ores at Buchans in Newfoundland. Small amounts of lead concentrates are produced in Quebec and Ontario.

13.—Quantity and Value of Lead Produced from Canadian Ores, 1950-59

NOTE.—Figures from 1887 are given in the corresponding table of previous Year Books beginning with the 1929 edition.

Year	Quantity	Value	Year	Quantity	Value
	tons	\$		tons	\$
1950.....	165,697	47,886,452	1955.....	202,762	58,314,500
1951.....	158,231	58,229,146	1956.....	188,854	58,582,651
1952.....	168,842	54,671,021	1957.....	181,484	50,670,407
1953.....	193,706	50,076,822	1958.....	186,680	42,413,805
1954.....	218,495	58,250,831	1959 ^p	186,495	39,574,191

Silver.—Silver production in 1959 reached the record amount of 32,239,137 oz.t. with a peak value of \$28,381,750. Most of the increase in 1959 over 1958 came from British Columbia and Yukon Territory. Production of this metal is fairly widespread across Canada, being mainly recovered as a by-product in the treatment of gold ores and ores of copper, lead, zinc, cobalt and nickel. A large part of Ontario's production of 9,956,316 oz. t. in 1959 originated in the silver-cobalt ores mined at Cobalt, and British Columbia produced 8,674,723 oz. t. from its silver-lead-zinc ores. Yukon Territory is the third largest producer, followed by Quebec. Canada's annual output of silver is exceeded only by that of Mexico and the United States.

14.—Quantity of Silver Produced, by Province, and Total Value 1950-59

NOTE.—Figures from 1887 are given in the corresponding table of previous Year Books beginning with the 1916-17 edition.

Year	Average Price per oz. t. (Canadian funds)	Newfoundland	Nova Scotia	Quebec	Ontario	Manitoba
	cts.	oz. t.	oz. t.	oz. t.	oz. t.	oz. t.
1950.....	80.82	575,524	2	4,343,379	4,408,620	893,099
1951.....	94.55	534,519	1	4,154,290	4,520,094	613,141
1952.....	83.52	638,524	91,886	4,536,247	6,491,124	412,149
1953.....	84.01	648,389	226,225	4,571,373	5,154,619	429,508
1954.....	83.26	742,120	262,361	4,907,304	5,443,721	411,125
1955.....	88.18	701,792	262,067	4,786,695	6,051,017	454,528
1956.....	89.67	957,125	92,859	4,063,986	6,626,447	430,124
1957.....	87.37	1,196,414	1	3,645,856	6,910,130	407,834
1958.....	86.81	1,267,078	4	3,908,361	9,815,257	320,759
1959 ^p	87.79	1,107,135	2	4,071,377	9,956,316	366,237
	Saskatchewan	British Columbia	Northwest Territories	Yukon Territory	Canada ¹	
	oz. t.	oz. t.	oz. t.	oz. t.	oz. t.	\$
1950.....	1,207,796	8,528,107	62,111	3,202,779	23,221,431	18,767,561 [*]
1951.....	1,454,341	8,342,414	64,228	3,442,788	23,125,825	21,865,467
1952.....	1,179,514	7,784,964	59,258	4,028,551	25,222,227	21,065,603
1953.....	1,257,622	9,308,874	63,592	6,639,127	28,299,335	23,774,271
1954.....	1,474,370	10,825,614	59,037	6,992,279	31,117,949	25,907,870
1955.....	1,230,179	8,702,122	58,477	5,712,219	27,984,204	24,676,472
1956.....	1,179,110	8,801,398	69,916	6,192,706	28,431,847	25,497,681
1957.....	1,145,571	8,584,991	69,104	6,484,185	28,823,298	25,182,915
1958.....	1,299,077	8,013,428	72,779	6,415,560	31,163,470	27,053,007
1959 ^p	1,182,082	8,674,723	69,786	6,901,461	32,329,137	28,381,750

¹ Includes relatively small quantities produced in New Brunswick and Alberta; there was no silver produced in New Brunswick in 1959.

Metals of the Platinum Group.—Production in 1959 was above the 1958 output but still below the peak of 1957. The whole production comes from the nickel-copper ores at Sudbury, Ont., and the metals are recovered in the form of residues in the electrolytic refinery tanks at Port Colborne, Ont., and at the refinery in Norway to which the Falconbridge Nickel Company Limited ships nickel-copper matte.

15.—Quantity and Value of Platinum and Palladium¹ Produced, 1950-59

NOTE.—Figures from 1921 are given in the corresponding table of previous Year Books beginning with the 1940 edition.

Year	Platinum		Palladium ¹		Year	Platinum		Palladium ¹	
	oz. t.	\$	oz. t.	\$		oz. t.	\$	oz. t.	\$
1950.....	124,571	10,255,929	148,741	7,578,144	1955....	170,494	14,747,732	214,252	8,321,633
1951.....	153,483	14,542,515	164,905	7,950,107	1956....	151,357	15,725,992	163,451	6,681,098
1952.....	122,317	10,916,792	157,407	7,559,109	1957....	199,565	17,835,124	216,582	7,896,209
1953.....	137,545	12,550,981	166,013	7,495,409	1958....	146,092	9,481,371	154,366	4,840,072
1954.....	154,356	12,950,469	189,350	7,956,087	1959 ^p ...	149,510	10,951,608	170,160	5,662,499

¹ Includes also iridium, rhodium, ruthenium.

Subsection 4.—Production of Non-metallic Minerals (excluding Fuels)

Asbestos is by far the most important item in this group in point of value, followed by salt, gypsum and sulphur. These four items are discussed separately below; the quantity and value of other non-metallic minerals produced are shown in Table 2, p. 570. See also the review of developments in the industrial mineral field at pp. 548-551.

Asbestos.—After a 11.6-p.c. decline in 1958, the tonnage of asbestos produced in 1959 increased again to almost the 1957 level and the value of that tonnage reached a record high of \$106,592,000. Quebec with 12 producing mines accounted for 94.5 p.c. of the Canadian total; Ontario had one mine which produced 23,700 tons and British Columbia one mine which produced 34,025 tons.

16.—Quantity and Value of Asbestos Produced, 1950-59

NOTE.—Figures from 1896 are given in the corresponding table of previous Year Books beginning with the 1911 edition.

Year	Quantity	Value	Year	Quantity	Value
	tons	\$		tons	\$
1950.....	875,344	65,854,568	1955.....	1,063,802	96,191,317
1951.....	973,198	81,584,345	1956.....	1,014,249	99,859,969
1952.....	929,339	89,254,913	1957.....	1,046,086	104,489,431
1953.....	911,226	86,052,895	1958.....	925,331	92,276,748
1954.....	924,116	86,409,212	1959 ^a	1,042,253	106,591,686

Salt.—The production of salt in 1959 reached the record amount of 3,233,512 tons, a 36.1-p.c. increase in tonnage over 1958 and a 16.5-p.c. increase in value. Ontario produced 92.3 p.c. of the tonnage in 1959 and, with a large new mine in production, accounted for the major part of the increase over the previous year. Output in all producing provinces, with the exception of Nova Scotia, was somewhat higher. Rock salt is mined in Nova Scotia and Ontario only; brine wells are operated in Nova Scotia, Ontario, Manitoba, Saskatchewan and Alberta.

17.—Quantity of Salt Produced, by Province, and Total Value 1950-59

NOTE.—Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1946 edition.

Year	Nova Scotia	Ontario	Manitoba	Saskatchewan	Alberta	Canada	
	tons	tons	tons	tons	tons	tons	\$
1950.....	101,930	696,582	16,592	18,186	25,606	858,896	7,011,306
1951.....	127,252	772,585	16,778	28,192	19,718	964,525	7,905,977
1952.....	138,845	757,025	18,113	33,540	24,380	971,903	7,774,815
1953.....	127,819	749,046	18,078	35,100	24,885	954,928	6,974,501
1954.....	150,589	733,066	17,809	37,227	31,196	969,887	8,340,163
1955.....	144,862	998,789	18,954	40,748	41,408	1,244,761	10,122,299
1956.....	132,539	1,347,729	21,068	42,814	46,654	1,590,804	12,144,476
1957.....	122,763	1,538,805	19,372	43,684	46,935	1,771,559	13,989,703
1958.....	125,872	2,126,483	20,560	46,511	55,766	2,375,192	14,989,542
1959 ^a	120,000	2,983,087	22,600	48,000	59,825	3,233,512	17,462,050

Gypsum.—Nova Scotia deposits provided more than 85 p.c. of the total output of gypsum in 1959. The increase of 61.7 p.c. in the tonnage produced in that province over 1958, together with moderate increases in Newfoundland, Manitoba and British Columbia, brought the Canadian total to the record level of nearly 6,000,000 tons having a value of \$8,890,000. In Canada gypsum is used in the manufacture of plaster and wallboard and is added to Portland cement to control setting, but the greater part of the output is exported in crude form to United States plants for processing.

18.—Quantity of Gypsum Produced, by Province, and Total Value 1950-59

NOTE.—Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1943-44 edition.

Year	Newfoundland	Nova Scotia	New Brunswick	Ontario	Manitoba	British Columbia	Canada	
	tons	tons	tons	tons	tons	tons	tons	\$
1950.....	—	3,185,199	82,841	199,314	114,555	84,627	3,666,336	6,707,506
1951.....	—	3,190,030	109,469	262,581	134,704	105,908	3,802,692	5,880,853
1952.....	8,660	2,969,312	110,183	278,992	130,934	92,702	3,590,783	6,538,074
1953.....	26,531	3,050,832	120,816	334,495	163,313	145,470	3,841,457	7,399,884
1954.....	26,653	3,168,134	88,856	357,432	162,037	147,310	3,950,422	7,094,671
1955.....	46,459	3,838,847	90,096	366,416	176,005	150,078	4,667,901	8,037,153
1956.....	37,000	4,144,147	86,104	366,956	185,986	75,618	4,895,811	7,260,236
1957.....	29,465	3,842,027	93,249	379,621	183,708	49,422	4,577,492	7,745,105
1958.....	36,307	3,149,719	105,749	425,733	176,123	70,498	3,964,129	5,189,159
1959.....	40,000	5,093,960	96,067	415,088	198,104	98,104	5,941,323	8,889,748

Sulphur.—Figures in Table 19 represent the quantity and value of sulphur contained in derivatives from smelter gases such as sulphur dioxide, sulphuric acid, etc., and in pyrite and pyrrhotite shipments. Sulphur refined from natural gas production is not included.

In Canada sulphur is used in the treatment of sulphite pulps and in the manufacture of rayon, explosives, rubber goods, petroleum refining, matches and insecticides.

19.—Quantity and Value of Sulphur Produced from Smelter Gases and in Pyrite and Pyrrhotite Shipments, 1950-59

Year	Sulphur in Smelter Gases		Producers' Shipments Pyrite and Pyrrhotite		
	Quantity	Value	Gross Weight	Sulphur Content	Value
	tons	\$	tons	tons	\$
1950.....	150,685	1,506,850	312,614	150,487	682,810
1951.....	156,427	1,564,275	444,948	215,363	1,556,510
1952.....	160,547 ¹	1,605,470	553,987	263,241 ²	2,245,713
1953.....	172,200 ¹	1,722,000	408,267	186,650 ²	1,450,698
1954.....	221,247 ¹	2,212,470	687,928	311,159 ²	2,663,499
1955.....	224,457 ¹	2,244,570	878,452	403,986 ²	3,740,383
1956.....	236,088 ²	2,323,590	1,046,740	473,605	4,538,785
1957.....	235,123 ²	2,322,067	1,166,416	515,096	4,808,228
1958.....	241,055 ²	2,361,252	1,191,731	512,427	4,248,668
1959.....	278,204 ²	2,718,290	1,051,873	..	3,213,814

¹ Does not include sulphur in acid made from roasting zinc sulphide concentrates at Arvida. sulphur in acid made from roasting zinc sulphide concentrates at Arvida.

² Includes

Subsection 5.—Production of Fuels

Coal.—The production of coal continued its downward trend in 1959, recording a reduction of 9.3 p.c. in quantity and 8.6 p.c. in value from 1958. Consumption was also considerably lower.

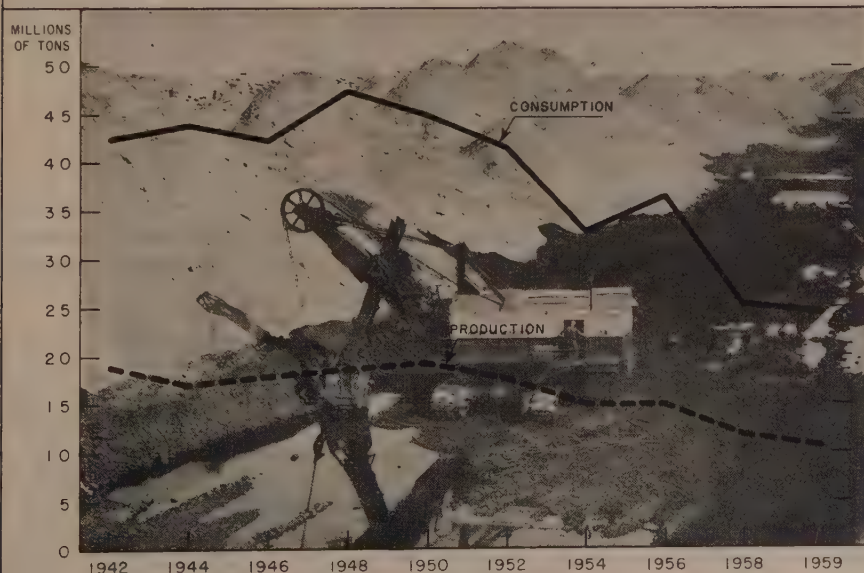
Increases in New Brunswick and Alberta were more than counterbalanced by decreases in all other producing provinces. Imports were also lower but exports showed a moderate improvement, increasing by 39.9 p.c. in quantity and 23.2 p.c. in value.

20.—Coal Production, by Province, 1950-59

NOTE.—Figures from 1874 are given in the corresponding table of previous Year Books beginning with the 1911 edition.

Year	Nova Scotia	New Brunswick	Saskatchewan	Alberta	British Columbia	Yukon Territory	Canada	
	tons	tons	tons	tons	tons	tons	tons	\$
1950.....	6,478,405	607,116	2,203,223	8,116,220	1,730,445	3,703	19,139,112	110,140,399
1951.....	6,307,629	653,439	2,223,318	7,659,329	1,739,412	3,696	18,586,823	109,038,855
1952.....	5,905,265	742,823	2,083,465	7,194,757	1,644,250	8,442	17,579,002	111,026,149
1953.....	5,787,026	721,252	2,021,304	5,917,474	1,443,006	10,611	15,900,673	102,721,875
1954.....	5,842,896	781,271	2,116,740	4,859,049	1,299,510	14,113	14,913,579	96,600,266
1955.....	5,731,026	877,838	2,293,816	4,455,279	1,453,881	7,040	14,818,880	93,579,471
1956.....	5,775,025	988,266	2,341,641	4,328,787	1,472,519	9,372	14,915,610	95,349,763
1957.....	5,685,770	976,597	2,248,812	3,156,546	1,113,699	7,731	13,189,155	90,220,670
1958.....	5,269,879	790,719	2,253,176	2,519,901	849,091	4,344	11,687,110	79,963,327
1959.....	4,322,323	988,785	1,988,147	2,570,103	724,613	3,284	10,597,255	73,056,903

PRODUCTION AND CONSUMPTION OF COAL



21.—Imports of Anthracite, Bituminous and Lignite Coal, 1950-59

NOTE.—Figures from 1868 are given in the corresponding table of previous Year Books beginning with the 1911 edition.

Year	Anthracite ¹		Bituminous ²		Lignite		Totals ³	
	tons	\$	tons	\$	tons	\$	tons	\$
1950.....	4,286,383	54,285,320	22,660,969	120,443,963	7,471	34,848	26,954,823	174,764,131
1951.....	3,853,431	51,244,639	22,938,824	116,802,323	9,150	42,486	26,801,405	168,089,448
1952.....	3,894,863	49,430,308	21,030,503	101,203,443	7,487	33,403	24,932,853	150,667,154
1953.....	2,989,054	40,088,265	20,273,425	96,464,453	3,062	14,735	23,265,541	136,567,453
1954.....	2,754,882	33,163,183	15,822,283	71,617,515	2,824	14,500	18,579,989	104,795,198
1955.....	2,646,503	30,190,088	17,094,480	76,352,171	1,548	8,663	19,742,531	106,550,922
1956.....	2,545,627	30,060,480	20,065,807	98,666,368	1,940	9,822	22,613,374	128,736,670
1957.....	1,925,498	24,605,035	17,548,585	93,027,907	2,166	11,087	19,476,249	117,644,029
1958.....	1,556,018	19,130,513	12,934,262	68,880,374	1,035	5,095	14,491,315	88,015,982
1959 ^a	1,603,909	17,934,649	12,632,209	66,553,040	—	—	14,236,118	84,487,689

¹ Includes anthracite dust. ² Includes coal ex-warehoused for ships' stores. ³ Canada also imported 191,134 tons of briquettes of coal or coke valued at \$2,316,570 in 1950; 170,157 tons valued at \$2,061,798 in 1951; 155,597 tons valued at \$1,868,619 in 1952; 128,673 tons valued at \$1,601,376 in 1953; 128,163 tons valued at \$1,583,610 in 1954; 124,216 tons valued at \$1,536,347 in 1955; 126,724 tons valued at \$1,581,699 in 1956; 73,306 tons valued at \$937,679 in 1957; 41,820 tons valued at \$536,344 in 1958; and 24,521 tons valued at \$321,149 in 1959.

22.—Exports of Domestic Coal, 1950-59

NOTE.—Figures from 1868 are given in the corresponding table of previous Year Books beginning with the 1911 edition.

Year	Quantity		Value	Year	Quantity		Value
	tons	\$			tons	\$	
1950.....	394,961	3,198,040		1955.....	592,782	4,870,598	
1951.....	435,083	3,495,664		1956.....	594,166	4,710,030	
1952.....	388,960	3,203,522		1957.....	396,311	3,357,959	
1953.....	255,274	1,999,908		1958.....	338,544	2,907,513	
1954.....	219,346	1,716,435		1959 ^a	473,768	3,582,313	

The sources of coal consumed in Canada in the years 1950-59 are shown in Table 23 and detailed figures of coal made available for consumption in 1958 and 1959 are given in Table 24; the difference between the totals of the two tables in the same year is accounted for by the fact that coal received may be held in bond at Canadian ports and not cleared for consumption until required, and coal received in previous years may be taken out of bond (cleared for consumption) in a later year. Normally the coal made available for consumption is greater than the apparent domestic consumption as coal is landed at Canadian ports and re-exported or ex-warehoused for ships' stores without being taken out of bond but, while remaining in bond at the port, it is available for domestic consumption if required.

23.—Consumption of Canadian and Imported Coal in Canada, 1950-59

NOTE.—Figures from 1886 are given in the corresponding table of previous Year Books beginning with the 1921 edition.

Year	Canadian Coal ¹		Imported Coal 'Entered for Consumption'				Grand Total	Consumption per Capita ³
			From United States	From United Kingdom	Total ²			
	tons	p.c.	tons	tons	tons	p.c.	tons	tons
1950.....	18,224,944	40.6	26,224,893	423,874	26,649,049	59.4	44,873,993	3.27
1951.....	17,571,154	39.8	26,232,211	291,656	26,523,921	60.2	44,095,075	2.92
1952.....	16,749,416	40.5	24,248,804	356,032	24,603,789	59.5	41,353,205	2.87
1953.....	15,240,105	40.0	22,548,793	352,383	22,900,392	60.0	38,140,497	2.58
1954.....	14,466,212	44.0	18,054,962	266,304	18,322,056	56.0	32,788,268	2.16
1955.....	14,060,039	42.1	19,053,434	269,898	19,322,134	57.9	33,382,173	2.14
1956.....	14,115,095	38.9	22,045,485	153,404	22,198,049	61.1	36,313,144	2.26
1957.....	12,478,626	39.6	18,902,822	134,671	19,037,493	60.4	31,516,119	1.90
1958.....	11,054,757	43.9	14,089,557	65,275	14,154,121	56.1	25,208,878	1.48
1959.....	10,589,263 ^p	43.1	13,861,676	96,814	13,958,996	56.9	24,548,259	1.41

¹ The sum of Canadian coal mines' sales, colliery consumption, coal supplied to employees and coal used in making coke, etc., less the tonnage of coal exported.

² Includes small tonnages from countries other than the United Kingdom and the United States. Deductions have been made from this column to take account of foreign coal re-exported from Canada and bituminous coal ex-warehoused for ships' stores.

³ Figures based on estimates of population given at p. 196.

24.—Coal Made Available for Consumption in Canada, 1958 and 1959

NOTE.—Details by province are given in DBS annual report, *The Coal Mining Industry* (Catalogue No. 26-206).

Grade	Canadian Coal				Coal Imported ¹		Coal Made Available for Consumption	
	Produced		Exported				1958	1959 ^p
	1958	1959 ^p	1958	1959	1958	1959			1958	1959^{p}
	tons	tons	tons	tons	tons	tons	tons	tons
Anthracite.....	—	—	—	—	1,494,702	1,456,366	1,494,702	1,456,366
Bituminous.....	7,748,289	6,945,459	212,823	338,318	11,831,203	12,147,655	19,366,669	18,754,796
Subbituminous..	1,685,645	1,733,883	1,086	1,012	—	—	1,684,559	1,732,871
Lignite.....	2,253,176	1,947,380	8,341	2,564	—	—	2,244,835	1,944,816
Totals.....	11,687,110	10,626,722	222,250	341,894	13,325,995	13,604,021	24,793,765	23,888,849

¹ Coal reaching Canadian ports whether or not it is cleared through customs, exclusive of 35,905 tons of imported briquettes in 1958 and 25,450 tons in 1959.

Petroleum.—The upward climb of crude petroleum production in evidence since the discovery of the Leduc field in Alberta in 1947 halted temporarily in 1958 but resumed in 1959. Production in the latter year reached a record level, 1.5 p.c. above the previous peak in 1957, but the 1957 value still remained the high point. The increase in 1959 over 1958 was mainly accounted for by a more than 15,000,000-bbl. increase in Alberta, although output was also higher in Ontario and Saskatchewan.

25.—Quantity and Value of Crude Petroleum Produced, by Province, 1950-59

NOTE.—Figures from 1936 are given in the corresponding table of previous Year Books beginning with the 1948-49 edition.

Year	New Brunswick	Ontario	Manitoba	Saskatchewan	Alberta	Northwest Territories	Canada
QUANTITY							
	bbl.	bbl.	bbl.	bbl.	bbl.	bbl.	bbl.
1950.....	17,137	250,655	—	1,041,098	27,548,169	186,729	29,043,788
1951.....	15,551	197,171	10,698	1,249,281	45,915,384	227,449	47,615,534
1952.....	14,237	191,814	104,826	1,696,505	58,915,723	314,217	61,237,322
1953.....	14,738	299,685	653,514	2,797,888	76,816,383	316,689	80,898,997
1954.....	13,046	412,474	2,148,184	5,422,899	87,713,855	369,887	96,080,345
1955.....	12,548	525,510	4,145,756	11,317,168	113,035,046	404,219	129,440,247
1956.....	16,628	593,370	5,786,540	21,077,371	143,909,641	449,409	171,981,413 ¹
1957.....	19,401	623,666	6,089,743	36,861,089	137,492,316	420,844	181,848,004 ²
1958.....	15,189	778,341	5,829,226	44,626,148	113,277,847	457,086	165,496,196 ³
1959 ⁴	14,500	1,035,000	5,100,000	48,500,000	128,700,000	420,000	184,593,000 ⁴
VALUE							
	\$	\$	\$	\$	\$	\$	\$
1950.....	23,992	892,000	—	1,134,797	82,216,492	352,656	84,619,937
1951.....	21,771	677,905	26,478	1,659,045	113,870,152	399,887	116,655,238
1952.....	19,932	641,037	229,299	2,256,352	139,512,432	379,160	143,038,212
1953.....	20,633	994,835	1,714,806	3,833,107	193,761,644	257,251	200,582,276
1954.....	18,265	1,391,687	5,619,649	8,183,304	228,319,165	344,960	240,877,030
1955.....	17,567	1,599,335	9,618,154	18,317,968	274,901,232	1,185,780	305,640,036
1956.....	23,279	1,958,121	13,633,088	36,253,078	353,629,158	762,773	406,561,872 ¹
1957.....	27,161	2,160,000	15,467,947	79,325,064	355,555,140	294,591	453,593,620 ²
1958.....	21,265	2,623,000	14,415,676	96,704,863	283,262,592	698,266	398,747,818 ³
1959 ⁴	20,300	3,300,000	11,615,000	101,000,000	308,880,000	630,000	426,950,227 ⁴

¹ Includes 148,454 bbl. valued at \$302,375 produced in British Columbia. ² Includes 340,945 bbl. valued at \$763,717 produced in British Columbia. ³ Includes 512,359 bbl. valued at \$1,022,156 produced in British Columbia. ⁴ Includes 823,500 bbl. valued at \$1,504,927 produced in British Columbia.

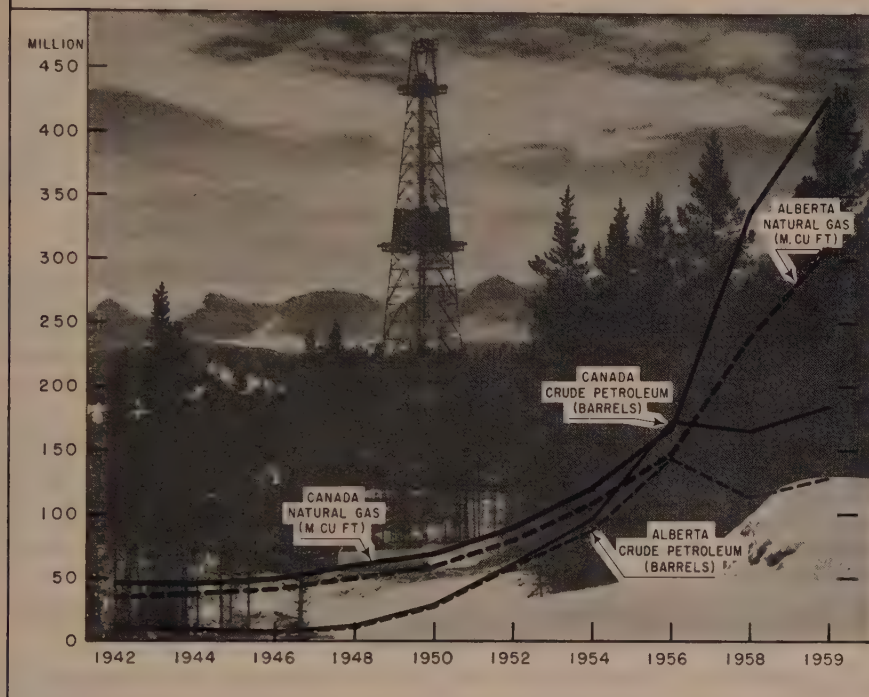
Natural Gas.—The output of natural gas continued to increase at a rapid rate, reflecting heavier pipeline deliveries and higher domestic sales. Shipments, which amounted to 150,800,000 M cu. feet in 1955, reached a high of 427,800,000 M cu. feet in 1959, about 309,000,000 M cu. feet of which came from Alberta. That province, being by far the major producer, was responsible for most of the increase in production in 1959. Several plants have been built in Alberta to treat natural gas for the removal of sulphur, butane, propane and other hydrocarbons prior to delivery to the transmission pipelines which now extend eastward as far as Quebec City and westward to Vancouver and the northwestern United States.

26.—Quantities of Natural Gas Produced, by Province, and Total Value 1950-59

NOTE.—Figures from 1920 are given in the corresponding table of previous Year Books beginning with the 1940 edition.

Year	New Brunswick	Ontario	Saskatchewan	Alberta	British Columbia	Northwest Territories	Canada	
	M cu. ft.	M cu. ft.	M cu. ft.	M cu. ft.	M cu. ft.	M cu. ft.	M cu. ft.	\$
1950.....	361,877	8,009,488	813,554	58,603,976	—	33,335	67,822,230	6,433,041
1951.....	261,579	8,442,842	860,082	69,876,831	—	19,333	79,460,667	7,158,920
1952.....	202,042	8,302,190	1,007,491	79,149,895	—	24,847	88,686,465	9,517,638
1953.....	177,112	9,708,969	1,422,128	89,651,605	—	26,109	100,985,923	10,877,017
1954.....	183,457	10,015,818	3,333,077	107,173,777	—	29,085	120,735,214	12,482,109
1955.....	186,549	10,852,857	6,706,743	133,007,493	—	18,670	150,772,312	15,098,508
1956.....	190,322	12,811,618	9,807,697	146,133,893	187,846	21,210	169,152,586	16,849,556
1957.....	176,417	14,400,913	13,994,347	183,140,820	8,274,942	19,243	220,006,682	20,962,501
1958.....	123,957	16,147,986	18,819,795	239,049,591	63,638,297	24,100	337,803,726	32,057,536
1959 ⁴	120,000	17,000,000	34,000,000	309,000,000	67,621,500	62,500	427,804,000	40,098,850

PRODUCTION OF CRUDE PETROLEUM AND NATURAL GAS FOR CANADA AND THE PROVINCE OF ALBERTA



Subsection 6.—Production of Structural Materials

Active construction throughout Canada in recent years has kept production of all structural materials at a high level. In 1959 this group registered an advance of 1.6 p.c. over 1958, to reach a record total value of more than \$314,000,000. All provinces shared in the general increase except Quebec where reduced production of stone brought the total down. For Canada as a whole, gains of 4.2 p.c. in the value of sand and gravel, 1.5 p.c. in cement and 8.3 p.c. in clay products highlighted 1959. The value of output of building stone was lower by 8.0 p.c.

In point of value, the production of sand and gravel was the most important in 1959, followed by cement, stone, clay products and lime. Major developments in the structural materials industries during 1958-59 are covered in the review at pp. 550-551.

Sand and Gravel.—Deposits of sand and gravel are numerous throughout Eastern Canada with the exception of Prince Edward Island where gravels are scarce. The local needs for these materials are usually supplied from the nearest deposits as their cost to the consumer is governed largely by the length of the haul. This accounts for the large number of small pits and the small number of large plants. Every province except New Brunswick and Prince Edward Island produces natural bonded sand but some grades particularly suitable for certain industries command much higher prices than ordinary sand. Quebec and Ontario contributed 64 p.c. of the total quantity of sand and gravel

in 1959. The greater part of the output is used in road improvement, concrete works and railway ballast, and most of the commercial plants are equipped for producing crushed gravel, a product that can compete with crushed stone.

27.—Quantity and Value of Sand, and Sand and Gravel Produced, 1956-58

Material and Purpose	1956		1957		1958	
	Quantity	Gross Value	Quantity	Gross Value	Quantity	Gross Value
	tons	\$	tons	\$	tons	\$
Sand—						
Moulding sand.....	26,871	71,163	17,618	60,284	21,346	98,179
For building, concrete, roads, etc...	11,902,438	9,219,153	14,173,048	9,673,088	13,232,445	11,902,625
Other.....	553,030	369,680	435,488	388,213	313,391	171,691
Sand and Gravel—						
For railway ballast.....	7,124,461	2,493,086	7,687,770	3,057,655	8,373,117	3,624,978
For concrete, roads, etc.....	102,177,661	51,832,543	108,654,941	56,593,792	106,229,805	55,362,687
For mine filling.....	2,947,289	848,259	3,374,630	880,085	4,233,347	2,042,032
Crushed gravel.....	24,069,518	17,123,468	25,486,017	21,286,237	27,807,494	23,080,171
Totals, Sand and Gravel.....	148,801,268	81,957,352	159,829,512	91,939,354	160,210,945	96,232,363

Cement.—The production of cement continued its upward trend in 1959, showing an increase over 1958 of 2.3 p.c. in quantity and 1.5 p.c. in value. Of the Canadian total of 6,296,010 tons, Ontario contributed 37.7 p.c. and Quebec 31.4 p.c. and all other provinces except Prince Edward Island and Nova Scotia contributed varying amounts; the percentages changed little from the previous year. Moderate increases in production were shown by Manitoba, Alberta and British Columbia.

28.—Quantity and Value of Production, Imports, Exports and Apparent Consumption of Cement, 1950-59

Note.—Figures from 1910 are given in the corresponding table of previous Year Books beginning with the 1939 edition.

Year	Shipments (sold or used)		Imports	Exports	Apparent Consumption ¹
	tons	\$	tons	tons	tons
1950.....	2,929,820	35,894,124	242,588	4,184	3,168,224
1951.....	2,976,367	40,446,288	407,300	453	3,383,214
1952.....	3,241,095	48,059,470	509,947	754	3,750,288
1953.....	3,891,708	58,842,022	434,487	2,577	4,323,618
1954.....	3,926,559	59,035,644	401,135	21,638	4,306,056
1955.....	4,404,480	65,650,025	517,890	168,907	4,753,463
1956.....	5,021,683	75,233,021	677,616 ²	124,561	5,574,738
1957.....	6,049,098	93,167,477	92,380	338,315	5,803,163
1958.....	6,153,421	96,414,142	41,555	141,250	6,053,726
1959 ^p	6,296,010	97,889,446	29,256	303,126	6,022,140

¹ Shipments plus imports less exports.

² Includes imported clinker, other than white.

Stone.—The stone industry has two main divisions—stone quarrying and the stone products industry. The granite, limestone, marble, sandstone and slate quarries of Canada yield high-grade structural and decorative materials and also supply requirements for chemical and other allied industries. The gross value of stone of all varieties produced in Canada in 1959 totalled \$51,167,000 as compared with \$55,583,000 in 1958. Detailed data for 1959 were not available at time of going to press.

29.—Quantity and Value of Stone Produced, 1956-58

Type	1956		1957		1958	
	Quantity	Gross Value	Quantity	Gross Value	Quantity	Gross Value
	tons	\$	tons	\$	tons	\$
Building.....	139,473	4,929,535	129,865	5,737,049	145,229	6,114,234
Monumental and ornamental.....	15,019	1,159,881	17,045	1,241,504	16,147	1,224,532
Stone for agriculture.....	476,506	1,232,874	610,398	1,471,841	696,437	1,790,169
Chemical Uses—						
Flux.....	1,667,251	2,093,475	1,584,059	1,788,177	1,116,163	1,337,133
Pulp and paper.....	433,840	1,260,158	395,725	1,214,710	340,750	1,093,517
Other.....	295,865	368,195	285,219	411,913	416,820	381,341
Rubble and riprap.....	1,338,988	1,383,843	3,958,004	5,831,052	2,479,319	2,597,157
Crushed.....	28,407,923	34,299,571	33,010,716	39,665,985	32,200,191	38,829,823
Totals¹.....	33,257,318	48,809,918	40,282,081	59,197,662	38,156,647	55,582,929

¹ Includes minor items not specified.

Clay Products.—The sales value of clay products produced in 1959 was the highest recorded, showing an increase over 1958 of 8.3 p.c. Common clays suitable for the production of building bricks and tile are found in all the provinces; production is greatest in Ontario and Quebec. Stoneware clays are produced largely from the Eastend and Willows areas in Saskatchewan and shipped to Medicine Hat, Alta., where, utilizing the cheap gas fuel, they are manufactured into stoneware, sewer pipe, pottery, tableware, etc. Stoneware clay also occurs in Nova Scotia and, although it has not been developed extensively for ceramic use, some is used for pottery. Two large plants and a few small plants manufacture fireclay refractories from domestic clay in British Columbia, Saskatchewan and Nova Scotia. Deposits of high-grade, plastic, white burning clays occur in northern Ontario and deposits yielding high-grade china clay have been found along the Fraser River in British Columbia but these have not been used on a commercial scale, nor have the ball clays of high bond strength occurring in the white mud beds of southern Saskatchewan been developed to any extent.

30.—Value (Total Sales) of Clay Products Produced, by Province, 1950-59

NOTE.—Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1946 edition.

Year	Newfoundland	Nova Scotia	New Brunswick	Quebec	Ontario
	\$	\$	\$	\$	\$
1950.....	31,089	1,126,969	681,139	6,324,387	9,323,263
1951.....	32,183	1,202,428	740,861	6,776,430	10,484,341
1952.....	29,285	1,221,893	655,084	6,645,387	11,975,200
1953.....	39,500	1,234,319	620,769	8,070,942	14,829,222
1954.....	33,042	1,082,039	587,994	8,055,692	17,230,231
1955.....	49,338	1,196,968	704,025	8,451,362	18,314,320
1956.....	47,145	1,196,868	975,855	9,415,703	19,173,356
1957.....	29,500	1,345,361	803,169	8,898,855	18,353,299
1958.....	58,282	1,509,536	629,921	10,675,463	22,786,291
1959 ^P	68,000	2,138,754	770,737	10,503,371	23,982,953
	Manitoba	Saskatchewan	Alberta	British Columbia	Canada
	\$	\$	\$	\$	\$
1950.....	690,730	581,506	1,950,309	1,081,496	21,790,888
1951.....	673,698	616,655	1,787,731	1,213,329	23,527,656
1952.....	575,088	711,778	1,964,618	1,183,195	24,961,528
1953.....	568,477	742,959	2,135,085	1,536,458	29,777,731
1954.....	512,989	844,398	2,316,982	1,696,731	32,360,098
1955.....	635,554	992,307	2,800,481	2,115,415	35,259,770
1956.....	754,503	1,054,071	3,038,544	2,128,955	37,784,980
1957.....	827,697	1,015,389	2,628,187	2,020,701	35,922,168
1958.....	682,943	1,158,803	2,569,170	1,639,494	41,709,903
1959 ^P	718,000	1,372,132	3,511,695	2,120,207	45,185,849

Section 5.—Industrial Statistics of the Mineral Industry

The scope of the annual statistics on mineral production published by the Dominion Bureau of Statistics includes a general review of the principal mineral industries such as the copper-gold, silver-lead-zinc, and nickel-copper industries as well as a section on metallurgical works. Additional data published at irregular intervals include such features as numbers of employees, salaries and wages paid and net value of shipments.

The figures for 'net value of shipments' of industries given in Tables 31 and 32 are, in each table, the settlements received for shipments by producers and the additional values obtained when the smelting of ores is completed in Canada, less the cost of materials, fuel, etc. The totals indicate more nearly the actual returns to the different industries than do the values for the minerals in Table 2, pp. 569-570 where, with respect to copper, lead, zinc and silver, values are computed by applying the average prices for the year in the principal metal markets to the total production from mines and smelters with no reduction for fuel, electricity and other supplies consumed in the production process.

Some imported ores and concentrates are treated in Canadian non-ferrous smelting and refining works, especially in the production of aluminum, where imported ore only is used, and of cobalt which is derived mainly from African ores. The net shipments of these plants include, therefore, the net value of the metals recovered from these imported ores and to this extent the net shipments shown in Tables 31 and 32 include products of other than Canadian origin.

31.—Summary Statistics of the Mineral Industry, by Province, 1958

Province or Territory	Plants or Mines	Em- ployees	Salaries and Wages	Purchased Fuel, Electricity and Process Supplies ¹	Net Value of Shipments ²
	No.	No.	\$	\$	\$
Newfoundland.....	376	4,509	18,312,005	22,879,323	37,713,764
Nova Scotia.....	652	10,223	33,326,405	13,522,800	49,729,597
New Brunswick.....	259	1,683	5,177,279	4,385,774	12,014,056
Quebec.....	4,429	37,017	158,048,309	477,612,425	396,436,065
Ontario.....	6,658	53,581	244,564,865	400,182,246	627,266,446
Manitoba.....	1,291	3,012	14,242,266	12,004,727	37,969,548
Saskatchewan.....	4,074	5,826	29,698,589	35,477,375	177,046,776
Alberta.....	10,519	8,380	36,098,821	28,898,535	330,629,051
British Columbia.....	1,179	13,383	60,071,708	138,080,163	122,230,976
Northwest Territories.....	80	1,203	6,862,291	4,567,587	19,490,095
Yukon Territory.....	55	723	4,097,107	4,391,869	6,673,258
Canada.....	29,571³	139,540	610,499,645	1,142,002,824	1,817,199,632

¹ Includes freight and smelter charges and cost of ores treated, process supplies, fuel, electricity, freight and smelter charges, and Saskatchewan credited to both provinces.

² Gross value of shipments less cost of
³ One plant on the border between Manitoba

A summary of the industrial statistics of the principal mineral industries operating in Canada in the years 1954 to 1958 is presented in Table 32.

32.—Summary Statistics of the Principal Mineral Industries, 1954-58

Industry and Year	Plants or Mines	Em- ployees	Salaries and Wages	Purchased Fuel, Electricity and Process Supplies ¹	Net Value of Shipments ²
	No.	No.	\$	\$	\$
Metallics					
1954	715	77,647	297,792,840	734,303,351	744,264,529
1955	818	81,970	329,437,928	971,546,007	909,932,534
1956	909	88,352	373,086,515	1,120,058,717	1,020,228,528
1957	867	92,167	413,308,141	1,088,705,583	982,697,540
1958	779	88,358	420,710,753	1,020,159,605	979,695,178
Placer gold.....					
1954	62	351	1,619,460	476,627	2,575,038
1955	64	345	1,480,888	284,511	2,443,595
1956	64	250	1,378,166	567,522	2,026,790
1957	57	243	1,180,225	457,137	2,116,716
1958	112	236	1,253,362	565,219	2,484,524
Gold quartz.....					
1954	157	18,479	63,578,156	32,017,855	95,627,104
1955	136	18,032	63,961,744	33,094,300	101,382,077
1956	133	17,031	62,701,494	30,972,433	97,011,062
1957	147	16,911	63,708,680	31,064,661	95,991,241
1958	127	16,811	64,208,042	26,857,011	107,140,993
Copper-gold-silver.....					
1954	118	7,837	29,791,332	35,079,924	70,814,052
1955	186	9,025	36,391,460	45,729,136	99,540,486
1956	314	10,533	43,929,096	50,245,735	96,941,696
1957	261	10,359	46,694,352	50,319,084	68,694,057
1958	244	8,875	39,745,243	55,784,884	77,993,264
Silver-cobalt.....					
1954	15	808	2,614,266	1,191,243	4,103,256
1955	14	762	2,598,437	1,184,721	4,350,174
1956	15	694	2,415,545	1,061,309	3,502,093
1957	12	598	2,209,805	1,208,400	3,105,688
1958	12	570	2,115,670	1,159,155	3,633,390
Silver-lead-zinc.....					
1954	124	6,386	24,847,011	58,178,798	78,077,960
1955	103	6,529	26,741,770	57,523,638	82,663,039
1956	96	6,338	27,253,247	56,316,672	86,604,019
1957	83	5,844	26,256,837	56,476,096	59,485,349
1958	62	4,485	20,763,855	51,986,207	46,166,133
Nickel-copper.....					
1954	37	11,244	48,142,987	19,576,040	74,891,033
1955	38	10,953	48,670,802	20,573,009	75,454,036
1956	55	11,872	55,486,888	20,880,263	82,735,929
1957	85	12,124	59,807,695	26,279,245	84,148,711
1958	47	9,243	47,190,007	18,649,540	61,164,999
Iron ³					
1955	30	4,892	18,740,274	38,646,915	71,788,935
1956	40	6,469	29,249,650	60,755,398	99,606,720
1957	60	7,770	36,288,939	64,519,888	102,701,537
1958	59	7,404	36,032,817	46,955,612	79,175,569
Miscellaneous metals.....					
1954	180	6,494	24,603,658	17,241,822	66,138,130
1955	223	8,626	12,663,195	6,798,377	28,305,111
1956	169	4,377	20,532,485	13,712,560	40,781,866
1957	139	8,705	42,386,402	28,901,585	115,788,076
1958	91	14,375	78,320,507	60,882,835	223,484,942
Smelting and refining.....					
1954	22	26,048	102,595,970	570,541,042	352,037,956
1955	24	28,606	118,189,378	767,711,400	444,005,081
1956	23	30,788	130,139,944	885,546,825	511,018,353
1957	23	29,613	134,775,206	829,479,487	450,666,165
1958	25	26,959	131,081,250	757,319,142	378,451,364
Non-metallics					
1954	207	10,892	37,878,138	23,474,927	98,626,771
1955	243	11,722	42,390,871	27,496,572	112,871,820
1956	209	12,548	47,128,001	30,158,075	122,414,048
1957	192	12,310	48,361,030	32,530,865	126,561,143
1958	193	11,660	46,894,653	29,422,149	112,405,339

For footnotes, see end of table, p. 593.

32.—Summary Statistics of the Principal Mineral Industries, 1954-58—continued

Industry and Year	Plants or Mines	Em- ployees	Salaries and Wages	Purchased Fuel, Electricity and Process Supplies ¹	Net Value of Shipments ²
	No.	No.	\$	\$	\$
Non-metallics—concluded					
Asbestos.....1954	25	6,563	24,850,100	14,054,972	72,386,464
1955	30	6,729	28,116,049	16,297,401	83,373,250
1956	23	7,065	30,411,878	17,877,081	85,427,228
1957	22	7,357	32,283,287	20,566,634	87,447,407
1958	22	6,997	32,025,137	18,538,791	76,732,532
Feldspar, quartz and nepheline syenite....1954	29	377	1,193,766	554,188	3,107,993
1955	33	414	1,359,695	775,685	3,734,690
1956	30	502	1,792,484	759,489	5,258,255
1957	28	450	1,737,907	1,185,023	5,310,235
1958	35	450	1,804,827	1,173,230	4,382,352
Gypsum.....1954	14	932	2,929,829	2,166,490	4,929,289
1955	14	944	2,874,198	2,190,435	5,846,718
1956	15	1,030	3,317,673	2,357,526	4,902,710
1957	13	816	2,653,320	1,908,543	5,836,562
1958	13	627	2,300,288	1,265,949	3,923,210
Iron oxide.....1954	3	31	67,564	35,985	150,871
1955	4	33	71,781	44,156	121,772
1956	3	29	49,669	38,745	152,400
1957	3	26	64,011	51,100	141,288
1958	3	17	31,916	17,946	98,397
Mica.....1954	32	44	59,194	13,932	71,207
1955	33	31	42,495	11,648	66,727
1956	23	23	37,673	8,841	88,208
1957	25	45	66,283	12,996	100,462
1958	25	28	44,848	9,522	81,121
Peat.....1954	40	880	1,736,002	1,140,795	2,824,777
1955	39	1,180	2,109,166	1,350,085	3,301,326
1956	38	1,274	2,538,885	1,427,053	4,024,252
1957	35	1,168	2,542,210	1,466,080	4,432,616
1958	38	1,447	2,484,732	1,626,172	4,559,203
Salt.....1954	13	669	2,067,424	2,702,731	7,151,404
1955	13	691	2,347,080	3,299,285	8,569,792
1956	13	785	2,740,685	3,454,283	10,552,905
1957	12	800	3,118,482	3,643,214	12,198,835
1958	13	795	3,183,245	3,817,696	13,139,461
Soapstone and talc.....1954	4	53	134,437	100,754	288,294
1955	4	50	130,221	101,836	290,831
1956	4	67	169,120	113,533	315,802
1957	4	77	222,287	142,725	369,999
1958	4	76	213,576	141,130	378,651
Miscellaneous non-metallics ⁴.....1954	47	1,343	4,839,822	2,705,080	7,716,472
1955	73	1,650	5,340,186	3,426,041	7,561,714
1956	60	1,773	6,069,934	4,121,524	11,692,288
1957	50	1,571	5,673,243	3,554,550	10,723,739
1958	40	1,223	4,806,084	2,831,713	9,110,412
Fuels.....1954	12,357	24,807	78,271,162	22,931,832	329,809,609
1955	14,329	23,458	76,343,685	24,921,036	388,519,230
1956	16,811	24,187	85,820,926	30,211,422	482,704,117
1957	19,055	21,985	81,953,883	32,974,465	522,571,134
1958	20,012	20,226	75,566,464	32,424,395	471,315,135

For footnotes, see end of table, p. 593.

32.—Summary Statistics of the Principal Mineral Industries, 1954-58—concluded

Industry and Year	Plants or Mines	Em- ployees	Salaries and Wages	Purchased Fuel, Electricity and Process Supplies ¹	Net Value of Shipments ²
	No.	No.	\$	\$	\$
Fuels—concluded					
Coal.....1954	223	18,050	53,650,045	15,631,307	80,968,959
1955	203	16,590	50,325,387	15,368,193	78,211,278
1956	185	16,095	49,468,237	16,317,316	79,032,447
1957	170	14,569	47,222,273	16,312,034	73,908,636
1958	158	13,162	42,250,458	15,753,924	64,209,403
Natural gas.....1954	3,572	2,887	8,864,662	356,404	7,930,405
1955	3,659	2,849	9,070,036	478,580	8,715,539
1956	3,484	2,947	10,617,695	844,887	8,429,004
1957	3,939	1,951	7,033,566	533,602	9,929,154
1958	3,707	1,889	7,015,967	1,029,541	10,605,885
Petroleum.....1954	8,562	3,870	15,756,455	6,944,121	240,910,245
1955	10,467	4,019	16,948,262	9,074,263	301,592,413
1956	13,142	5,145	25,734,994	13,049,219	395,242,666
1957	14,946	5,465	27,698,044	16,128,829	438,733,344
1958	16,147	5,175	26,300,039	15,640,930	396,499,847
Structural Materials					
.....1954	8,625	16,099	51,363,733	41,692,754	167,197,827
1955	8,725	16,486	54,423,217	44,263,904	188,990,576
1956	9,008	17,473	60,012,212	51,230,249	212,390,178
1957	9,339	19,002	65,978,769	59,882,407	241,784,590
1958	8,587	18,696	67,327,775	59,996,675	253,783,980
Clay products.....1954	125	3,929	12,112,490	6,023,812	26,336,286
1955	118	4,118	12,850,485	6,174,226	30,178,957
1956	119	4,418	14,793,971	7,335,562	30,449,418
1957	111	4,067	13,963,399	6,979,907	28,942,251
1958	113	4,075	14,847,054	7,522,831	34,187,072
Cement.....1954	12	2,575	9,802,707	22,243,820	39,953,127
1955	12	2,801	10,962,895	24,475,775	44,336,891
1956	17	3,186	12,866,855	28,547,632	50,058,214
1957	17	3,465	15,317,388	35,886,600	61,192,441
1958	19	3,428	15,891,560	33,767,316	66,176,534
Lime.....1954	40	1,012	3,349,881	4,678,017	10,810,714
1955	39	1,099	3,776,481	4,783,461	11,793,430
1956	38	1,100	3,853,007	4,906,353	11,555,978
1957	39	1,152	3,982,533	5,432,083	12,096,699
1958	40	1,169	4,348,674	6,233,235	14,028,375
Sand and gravel.....1954	7,891	4,437	13,717,851	3,084,875	55,902,796
1955	7,999	4,360	14,442,413	3,358,947	64,416,106
1956	8,311	4,627	14,994,414	4,032,039	77,925,313
1957	8,589	5,937	18,162,499	4,432,490	87,506,864
1958	7,832	5,957	18,225,999	4,362,877	91,919,486
Stone.....1954	557	4,146	12,380,804	5,662,230	34,194,904
1955	557	4,108	12,390,943	5,471,495	38,265,192
1956	523	4,142	13,513,965	6,408,663	40,041,255
1957	583	4,331	14,552,950	7,151,327	52,046,335
1958	583	4,067	14,014,488	8,110,416	47,472,513
Grand Totals					
.....1954	21,904	129,445	465,305,873	822,402,864	1,339,898,726
1955	24,115	133,636	502,595,701	1,063,227,519	1,600,311,160
1956	26,937	142,560	566,047,654	1,231,658,463	1,837,756,871
1957	29,453	145,464	609,601,823	1,214,693,320	1,873,014,407
1958	29,571	139,540	610,499,645	1,142,002,824	1,817,199,632

¹ Includes freight and smelter charges and cost of ores treated.
process supplies, fuel, electricity, freight and smelter charges.
natural abrasives.

² Gross value of shipments less cost of
³ Available from 1955 only.

⁴ Includes

Section 6.—World Production of Certain Metallic Minerals and Fuels

Table 33 shows the production of certain metallic minerals and fuels in the different countries of the world for the year 1958. These figures are taken from the *United Nations Statistical Yearbook 1959* which presents production figures for 1948-58 for a much more extensive list of mining and quarrying industries. The 1958 figures are provisional and have been converted from kilograms to ounces troy for gold, from metric tons to ounces troy for silver, and from metric tons to short tons for the other metals and fuels shown.

33.—World Production of Certain Metallic Minerals and Fuels, 1958

Note.—Where dashes occur throughout this table they indicate that no figures were given in the *United Nations Statistical Yearbook* either because there was no production or because the quantity was not available.

Country	Gold	Silver	Copper	Iron	Lead	Zinc	Coal	Crude Petroleum
	'000 oz. t.	'000 oz. t.	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
Albania.....	—	—	—	—	—	—	—	444.2
Algeria.....	—	—	—	1,327.2	10.7	35.1	168.7	492.7
Angola.....	—	—	—	183.0	—	—	—	56.2
Argentina.....	0.7	—	—	34.2	33.4	39.0	287.7	5,620.7
Australia.....	1,102.7	16,249.0	81.5	2,640.0	366.3	294.4	22,843.2	—
Austria.....	—	—	2.8	1,178.4	6.7	8.5	155.4	3,126.2
Bahrain.....	—	—	—	—	—	—	—	2,242.1
Bechuanaland.....	0.2	—	—	—	—	—	—	—
Belgian Congo.....	354.3 ¹	4,533.3	262.0	—	—	125.7	324.1	—
Belgium.....	—	—	—	47.4	—	—	29,830.7	—
Bolivia.....	19.1	6,044.3 ²	—	—	24.3 ²	15.7 ²	—	493.8
Brazil.....	186.0	—	—	3,926.4	—	—	2,427.3	2,726.0
British Guiana.....	16.5	—	—	—	—	—	—	—
Brunei.....	—	—	—	—	—	—	—	5,741.9
Bulgaria.....	—	—	8.6	151.0	86.0	67.2	418.9	244.7
Burma.....	—	1,961.2	0.3	4.4	39.0	21.7	—	511.5
Cameroons, French.....	2.0	—	—	—	—	—	—	—
Canada ²	4,571.3	31,163.5	345.1	15,726.3	186.7	425.1	11,687.1	22,365.1
Chile.....	111.0	1,504.7	514.9	2,523.2	—	—	2,203.5	800.3
China—								
Mainland.....	—	—	—	—	—	—	—	2,491.2
Taiwan.....	21.3	—	—	—	—	—	3,506.5	2.2
Colombia.....	371.7	106.1	—	—	—	—	2,425.1	7,149.6 ⁴
Cuba.....	—	—	28.3	6.6	—	—	—	51.8
Cyprus.....	—	—	33.8	—	—	—	—	—
Czechoslovakia.....	—	—	—	927.0	—	—	28,452.9	116.8
Dominican Republic.....	—	—	—	22.0	—	—	—	—
Ecuador.....	20.1	83.6	—	—	—	—	—	447.5
El Salvador.....	2.4	196.1	—	—	—	—	—	—
Eritrea.....	6.4	—	—	—	—	—	—	—
Fiji Islands.....	82.0	—	—	—	—	—	—	—
Finland.....	25.3	559.4	—	—	2.5	60.6	—	—
France.....	31.8	5,147.3	—	21,296.6	14.3	14.8	63,626.5	1,527.8
French Equatorial Africa.....	23.7	—	—	—	3.9	—	—	556.7
French West Africa.....	3.2	—	—	—	—	—	—	—
Germany—								
Eastern.....	—	—	25.4	435.4	—	—	3,200.0	—
Federal Republic of.....	40.3	8,941.1	1.1	4,554.7	67.1	94.1	147,248.9	4,885.4
Saar.....	—	—	—	—	—	—	18,103.3	—
Ghana.....	852.8	—	—	—	—	—	—	—
Greece.....	—	96.5	—	154.3	4.4	15.9	—	—
Greenland.....	—	—	—	—	—	6.6	35.3	—
Guatemala.....	—	—	—	—	8.8	11.6	—	—
Guinea.....	—	—	—	238.1	—	—	—	—
Honduras.....	2.5 ²	3.2 ²	—	—	3.4	1.4	—	—
Hong Kong.....	—	—	—	66.1	—	—	—	—
Hungary.....	—	—	—	110.2	—	—	2,894.7	914.9
India.....	170.1	109.3	9.9	4,121.5	4.3	4.4	50,779.1	468.5
Indonesia.....	—	—	—	—	—	—	668.0	17,758.2
Iran.....	—	—	—	—	—	—	187.4	44,360.3
Iraq.....	—	—	—	—	—	—	—	39,319.4
Ireland.....	—	—	—	—	0.4	0.4	264.6	—

For footnotes, see end of table.

33.—World Production of Certain Metallic Minerals and Fuels, 1958—concluded

Country	Gold	Silver	Copper	Iron	Lead	Zinc	Coal	Crude Petroleum
	'000 oz. t.	'000 oz. t.	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons	'000 tons
Israel.....	—	—	—	—	—	—	—	112.4
Italy.....	4.1	1,334.3	0.8	716.5	64.0	149.6	798.1	1,690.9
Japan.....	309.5	8,336.7	89.8	1,261.0	40.5	157.6	54,756.2	404.5
Kenya.....	7.7	—	—	—	—	—	—	—
Korea, Republic of.....	72.1	247.6	0.6	146.6	1.3	0.3	2,944.3	—
Kuwait.....	—	—	—	—	—	—	—	77,401.0
Kuwait (neutral zone).....	—	—	—	—	—	—	—	4,692.5
Liberia.....	—	—	—	1,664.5	—	—	—	—
Luxembourg.....	—	—	—	1,929.0	—	—	—	—
Malagasy Republic.....	0.5	—	—	—	—	—	—	—
Malaya, Federation of.....	20.2	—	—	1,909.2	—	—	—	—
Mexico.....	332.2	47,004.4	71.7	640.4	222.6	247.0	1,621.5	14,937.4
Morocco.....	—	1,421.1	—	942.5	103.4	24.4	562.2	81.6
Mozambique.....	0.7	—	—	—	—	—	273.4	—
Netherlands.....	—	—	—	—	—	—	13,095.5	1,786.8
Netherlands New Guinea.....	—	—	—	—	—	—	—	286.6
New Guinea (Australia).....	43.8 ^a	25.7 ^b	—	—	—	—	—	—
New Zealand.....	25.0	3.2	—	1.1	—	—	939.2	—
Nicaragua.....	208.7 ^c	—	—	—	—	—	—	—
Nigeria.....	0.6	—	—	—	0.7	—	1,036.2	275.6
Norway.....	—	—	16.9	1,121.1	2.3	10.0	317.5	—
Pakistan.....	—	—	—	—	—	—	669.1	335.1
Peru.....	159.1	25,919.9	56.1	1,702.0	133.8	143.2	229.3	2,758.0
Philippines.....	422.8	498.3	51.8	677.9	1.4	—	119.0	—
Poland.....	—	—	8.8	640.4	36.5	135.6	104,698.6	192.9
Portugal.....	17.7	—	—	127.9	1.0	—	634.9	—
Portuguese India.....	—	—	—	1,630.3 ^d	—	—	—	—
Qatar.....	—	—	—	—	—	—	—	9,063.2
Rhodesia and Nyasaland, Federation of—	—	—	—	—	—	—	—	—
Northern Rhodesia.....	3.7	556.2	420.0	—	14.7	33.8	—	—
Southern Rhodesia.....	555.0	263.6	8.4	88.2	—	—	3,896.7	—
Romania.....	—	—	—	253.5	13.2	—	4,305.6	12,495.8
Sarawak.....	0.9	—	—	—	—	—	—	63.9
Saudi Arabia.....	—	—	—	—	—	—	—	55,260.0
Sierra Leone.....	—	—	—	917.1	—	—	—	—
South West Africa.....	—	1,720.1 ^e	31.0	—	83.8	44.9	—	—
Spain.....	—	1,829.4	4.5	2,494.5	77.3	90.7	15,904.1	79.4
Surinam.....	4.2	—	—	—	—	—	—	—
Sweden.....	121.6	2,900.0	20.5	12,148.6	46.6	77.8	351.6	—
Switzerland.....	—	—	—	43.0	—	—	—	—
Tanganyika.....	56.3 ^f	—	—	—	5.0 ^g	—	1.1	—
Thailand.....	—	—	—	11.0	1.1	—	—	—
Trinidad and Tobago.....	—	—	—	—	—	—	—	5,831.2
Tunisia.....	—	—	—	661.4	24.8	3.6	—	—
Turkey.....	—	—	24.8	625.0	—	—	4,479.8	361.6
Uganda.....	0.3 ^h	—	—	—	—	—	—	—
Union of South Africa.....	17,656.4	1,794.0	54.2	1,560.9	—	—	40,879.2	—
Union of Soviet Socialist Republics.....	—	—	—	56,774.5	—	—	389,104.8	124,787.1
United Arab Republic (Egypt).....	1.8	—	—	98.1	—	—	—	3,489.9
United Kingdom.....	—	—	—	4,418.1	4.5	0.3	241,722.5 ^g	160.9
United States.....	1,759.2	36,799.7	979.3	40,455.9	267.4	412.0	429,190.3	364,792.2
Venezuela.....	85.9	—	—	10,923.9	—	—	40.8	153,295.1
Viet Nam, Republic of.....	—	—	—	—	—	—	22.0	—
Yugoslavia.....	55.4	3,752.0	38.8	1,057.1	99.0	66.1	1,331.6	509.3

¹ Includes Ruanda-Urundi.² Exports.³ Final DBS figures.⁴ Includes natural gasoline.⁵ Includes Papua.⁶ Great Britain only.

CHAPTER XII.—POWER GENERATION AND UTILIZATION

CONSPECTUS

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NOTE.—The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Section 1.—Water Power Resources—Available and Developed*

Canada, a land of many lakes and rivers, has been favoured by nature with great water power resources distributed across the country. Adequate precipitation and favourable topography result in numerous fast-flowing rivers which offer excellent opportunities for the development of hydraulic power; with the exception of the prairies of the mid-west, water power resources of importance are found in virtually every part of the country. British Columbia, traversed by three distinct mountain ranges and with a relatively high rate of precipitation, has many mountain rivers which offer opportunity for power development. Extensive water power resources are available in the Yukon Territory, principally on the Yukon River and its tributaries. Alberta, although a prairie province, also has mountain streams from the Rockies and great reserves of undeveloped power on its large northern rivers. The Canadian Shield of Precambrian rock, which forms an arc around Hudson Bay and covers a portion of the Northwest Territories and northern Saskatchewan as well as large parts of Manitoba, Ontario, Quebec and Labrador, is a rough, forest-covered area characterized by innumerable lakes and by rivers with many falls and rapids. The Great Lakes-St. Lawrence River system and its tributaries provide the extensive power resources of Ontario and Quebec upon which their status as the principal manufacturing provinces of Canada is dependent and which compensate in large degree for the lack of indigenous coal. In New Brunswick and Nova Scotia and on the Island of Newfoundland, precipitation is moderately heavy and the rivers, though not large, afford numerous possibilities for power developments of moderate size. In Labrador the potential resources of the Hamilton River are outstanding.

An accurate comparison of Canada's water power resources and their development with those of other countries is not possible because world statistics are incomplete and are tabulated on differing bases. However, from information available it appears that Canada ranks second among the countries of the world in total installed capacity, being exceeded only by the United States; in installation per thousand population, Canada is exceeded

* Revised by the Water Resources Branch, Department of Northern Affairs and National Resources, Ottawa.

only by Norway. Canada is in approximately fifth place in potential power resources but, on the whole, those resources are more readily available to prospective markets than are the water power resources of other countries that outrank Canada, an exception being the United States. In particular might be mentioned the enormous potential resources of the great river systems of Africa and Asia.

Table 1 gives a summary of the water power resources of Canada and their development as at the beginning of 1960.

1.—Available and Developed Water Power, by Province, as at Jan. 1, 1960

Province or Territory	Available 24-Hour Power at 80 p.c. Efficiency		Turbine Installation ¹
	At Ordinary Minimum Flow	At Ordinary Six-Months Flow	
	hp.	hp.	hp.
Newfoundland.....	1,608,000	3,264,000	370,135
Prince Edward Island.....	500	3,000	1,660
Nova Scotia.....	30,500	177,000	183,168
New Brunswick.....	123,000	334,000	254,875
Quebec.....	10,896,000	20,445,000	11,315,407
Ontario.....	5,496,000	7,701,000	7,982,151
Manitoba.....	3,492,000	5,798,000	778,900
Saskatchewan.....	550,000	1,120,000	128,835
Alberta.....	911,000	2,453,000	312,595
British Columbia.....	18,200,000 ²	19,400,000 ²	3,509,460
Yukon Territory.....	4,678,000 ²	4,700,000 ²	38,190
Northwest Territories.....	374,000	808,000	13,050
Canada.....	46,359,000	66,203,000	24,888,426

¹ Includes water wheels and hydraulic turbines installed.
stream flow regulation based on known storage potentials.

² This figure reflects the effect of possible

The figures given in the first and second columns of Table 1 represent 24-hour power and are based upon rapids, falls and power sites of which the actual drop, or the head of possible concentration, has been measured or at least carefully estimated. Tabulations of potential power in Canada are not complete as many unrecorded rapids and falls of undetermined power capacity exist on rivers and streams throughout the country, particularly in the less explored northern districts. Apart from areas where definite studies have been carried out and the results recorded, no consideration has been given to the power concentrations that are feasible on rivers and streams of gradual gradient where economic heads possibly may be created by the construction of dams. Furthermore, the estimates of power available in different provinces do not include the power potential of major river diversions which have been investigated but not developed. Thus the figures in Table 1 of available power under the two conditions of stream flow represent only the minimum water power possibilities of Canada.

The figures in the third column of Table 1 give the total capacity of the water wheels actually installed and should not be placed in direct comparison with those in the first and second columns to deduce the percentage developed of the available water power resources. While the maximum economic turbine installation at any site can be determined only by careful consideration of all conditions and circumstances pertinent to its individual development, it is usual practice to install turbines that have a total capacity in excess of the power equivalent of the six-months flow at the site.

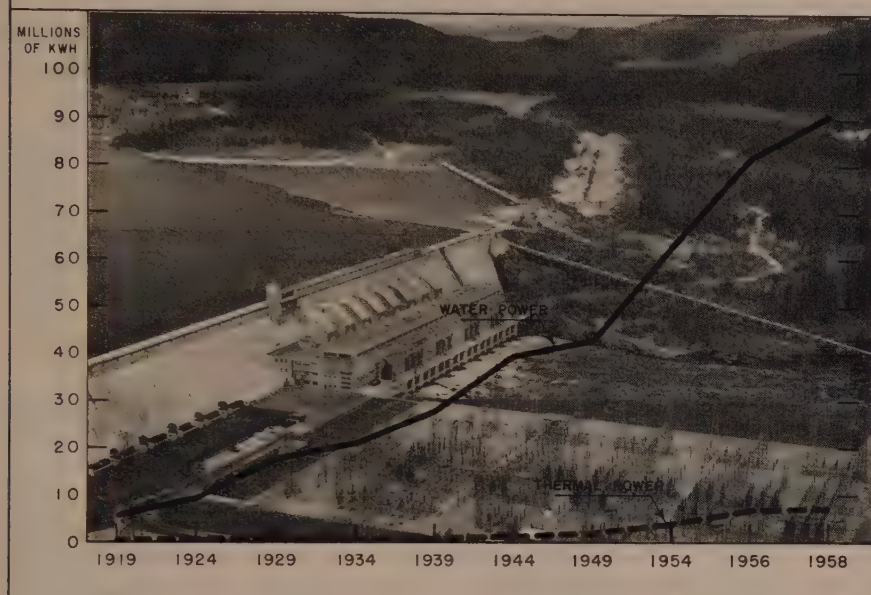
The consistent growth of hydraulic turbine capacity is shown in Table 2. The average annual increase from 1900 to 1905 of 56,000 hp. was stepped up sharply in subsequent years because of improvements in the transmission of electricity and the building of large generating stations. During the period 1906-22, development proceeded at the fairly uniform rate of 150,000 hp. per annum but the rate of installation increased sharply in 1923 and continued at about 377,000 hp. each year from 1923 to 1935. As an aftermath to the economic depression, the rate of installation was low during the years 1936-39 but increased to a high average of 481,000 hp. per annum during the period 1940-43 to satisfy war requirements. Few developments were undertaken in the later war years or in the immediate postwar period so that only a small amount of new capacity came into operation in the 1944-47 period. However, the effects of the later postwar program of construction are apparent in the large growth during the years 1948-59 when the average rate was about 1,200,000 hp. per annum. A continuation of this rate of growth is indicated for some years.

2.—Hydraulic Turbine Horsepower Installed, by Province, as at Dec. 31, Decennially 1900-50 and Annually 1951-59

NOTE.—Figures for the years 1900-30 are given in the 1939 Year Book, p. 362; for 1931-39 in the 1946 edition, p. 362; and for 1940-49 in the 1954 edition, pp. 556-557.

Year	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
	hp.	hp.	hp.	hp.	hp.	hp.
1900.....	—	1,521	19,810	4,601	82,864	53,876
1910.....	—	1,760	31,476	11,197	334,763	490,821
1920.....	—	2,233	37,623	21,976	955,090	1,067,422
1930.....	—	2,439	114,224	133,681	2,718,130	2,088,055
1940.....	—	2,617	139,217	133,347	4,320,943	2,597,595
1950.....	262,810	2,299	150,960	133,111	6,372,812	3,513,840
1951.....	279,160	2,299	150,960	132,911	6,755,351	3,718,505
1952.....	292,660	2,299	162,455	135,511	7,263,621	3,948,466
1953.....	311,150	1,900	162,433	164,130	7,719,122	4,006,686
1954.....	323,150	1,882	170,908	164,130	7,773,822	4,845,486
1955.....	329,150	1,882	177,018	164,130	7,975,657	5,367,866
1956.....	336,750	1,882	179,713	164,130	8,489,957	5,443,766
1957.....	337,970	1,882	181,958	209,130	8,979,857	5,824,766
1958.....	368,935	1,660	183,168	254,375	9,857,607	7,150,851
1959.....	370,135	1,660	183,168	254,875	11,315,407	7,982,151
	Manitoba	Saskatchewan	Alberta	British Columbia	Yukon and N.W.T.	Canada
	hp.	hp.	hp.	hp.	hp.	hp.
1900.....	1,000	—	280	9,366	5	173,323
1910.....	38,800	30	655	64,474	3,195	977,171
1920.....	85,325	35	33,122	309,534	13,199	2,515,559
1930.....	311,925	42,035	70,532	630,792	13,199	6,125,012
1940.....	420,925	90,835	71,997	788,763	18,199	8,584,438
1950.....	595,200	111,835	107,225	1,284,208	28,450	12,562,750
1951.....	596,400	111,835	207,825	1,358,808	28,450	13,342,504
1952.....	716,900	111,835	207,825	1,432,558	31,450	14,305,880
1953.....	716,900	109,835	207,960	1,496,518	32,440	14,929,074
1954.....	756,900	109,835	258,710	2,246,868	32,440	16,684,131
1955.....	796,900	109,835	284,010	2,271,460	33,240	17,511,148
1956.....	796,900	109,835	285,010	2,514,960	33,240	18,356,148
1957.....	778,900	109,835	308,010	3,122,460	36,240	19,891,008
1958.....	778,900	109,835	312,595	3,310,460	51,240	22,379,626
1959.....	778,900	128,835	312,595	3,509,460	51,240	24,888,426

ELECTRIC ENERGY GENERATED, BY TYPE OF STATION



The availability of large amounts of hydro-electric energy has greatly fostered the economical utilization of the natural products from land, forest and mine. Low-cost power is fundamental in meeting the enormous requirements of Canada's great pulp and paper and smelting and refining industries. Indeed, Canada's outstanding industrial growth in the postwar period has been made in conjunction with accelerated development of water power resources. From hydro-electric plants ranging in capacity from a few hundred to more than 1,000,000 hp., networks of transmission lines carry power to most urban centres and to an increasing number of rural districts. This wide distribution of power has facilitated the decentralization of industry, enabling manufacturing processes to be carried on in many of the smaller centres of population. Low-cost domestic electrical service also contributes in no small measure to the high standard of living in Canada.

Table 3 indicates the respective amounts of water power that have been developed by utilities and by industrial establishments. For this tabulation, utilities are defined as companies, municipalities or individuals who sell most of the power they develop. In some instances they include also certain subsidiary companies whose main purpose is to develop and sell power to a parent company for industrial purposes. Installations of utilities totalling 19,223,020 hp. represent 77 p.c. of Canada's total developed water power as at Dec. 31, 1959.

Industrial establishments are defined as companies or individuals developing power mainly for their own use. Installations of industrial establishments totalled 5,665,406 hp. as at Dec. 31, 1959. In addition, industry purchased a considerable amount of electricity from utilities.

The figure of total hydraulic installation in Canada (24,888,426 hp.) is the cumulative total of all existing installations of water wheels and hydraulic turbines irrespective of whether or not the equipment has been in use during the year. It has been adjusted to

Dec. 31, 1959 by the inclusion of new installations completed during the year and by deletions of old units that were dismantled.

3.—Developed Water Power, by Province, as at Dec. 31, 1959

Province or Territory	Turbine Installation		Total ³
	Utilities ¹	Industries ²	
	hp.	hp.	hp.
Newfoundland.....	269,015	101,120	370,135
Prince Edward Island.....	240	1,420	1,660
Nova Scotia.....	168,375	14,793	183,168
New Brunswick.....	227,945	26,930	254,875
Quebec.....	8,110,678	3,204,729	11,315,407
Ontario.....	7,503,310	478,841	7,982,151
Manitoba.....	763,000	15,900	778,900
Saskatchewan.....	125,500	3,335	128,835
Alberta.....	311,530	1,065	312,595
British Columbia.....	1,711,887	1,797,573	3,509,460
Yukon and Northwest Territories.....	31,540	19,700	51,240
Canada.....	19,223,020	5,665,406	24,888,426
Percentage of total installation.....	77	23	100

¹ Includes only hydro-electric stations that develop power mainly for sale.
developed by industries mainly for their own use.

² Includes only water power
³ Includes all water wheels and hydraulic turbines installed.

Section 2.—Thermal Power*

Thermally produced electric power capacity has expanded at a phenomenal rate since World War II. It has been estimated that the ratio of generating capacity in central thermal and hydro stations has sharply narrowed from 1:15 to 1:7 in the ten-year interval prior and subsequent to 1945. In 1959, this ratio approached 1:5 with the probability that by 1980 it would be as little as 1:2.

The accelerating trend toward thermal power developed significantly within the years 1950–59, particularly in the Atlantic and Prairie Provinces and in British Columbia. While Quebec, Ontario and the Northwest Territories depend less on thermally generated power than the remainder of Canada, these regions too will eventually have need for such power.

This trend has been brought about for a number of reasons, mainly of economic expediency. Canada's rapidly expanding economy demands ever-increasing supplies of electric energy to serve a growing population and industrial complex. Supplies of hydraulic energy within economic transmission distance of populated areas are becoming fewer and more costly to develop. Expenditure of large amounts of capital required to develop single blocks of hydro power at distant points cannot be justified unless there is immediate use for all of the power generated at a load factor which warrants its transmission over long distances. Moreover, the load on the established electrical systems in many areas now needs firming with extra supplies of reliable thermal energy not heretofore required, and this can be provided at lower capital cost per unit of installed capacity than by hydro facilities which may be affected by periodic water shortages.

The trend is well exemplified by reference to the vast complex of The Hydro-Electric Power Commission of Ontario, one of the world's largest single power operations. At the end of 1959 this system had generating resources of 5,756,640 kw. of which only 771,965 kw. were installed in thermal stations. Additional steam capacity under construction amounted to 1,500,000 kw. with forecast of about 3,000,000 kw. to meet requirements by 1970. The Commission's long-term forecast estimates that, if nuclear electricity is not available at competitive cost by 1980, 26,500,000 tons of coal annually, at a cost of some \$300,000,000,

* Revised in the Transportation and Public Utilities Section, Public Finance and Transportation Division, Dominion Bureau of Statistics.

will be required to fuel its steam capacity which by 1980 may amount to 10,000,000 kw. or twice the available generating facilities available from hydraulic sources.

The report of the sixth survey of capability and load shows that from 1950 to 1959 the net generating capability of thermal stations had increased by 296 p.c., as compared with 99 p.c. for hydro stations, with a forecast that by the end of 1962 thermal station net generating capability will have advanced over 1950 by 646 p.c. as against 129 p.c. for hydro stations.

Table 4 gives, by province, the estimated amount of increase in net generating capability and the percentage annual increment in thermal and hydro facilities for the period 1950-62. These data clearly indicate the growing importance of thermal generating capacity in comparison with hydro, and that, proportionately, the rate of growth is higher than for hydro in all of the provinces.

4.—Estimated Increase in Net Generating Capability, by Province, for the Period 1950-62

Province or Territory	Increase in Thermal Facilities		Increase in Hydro Facilities	
	Amount	Annual Increment ¹	Amount	Annual Increment ¹
	'000 kw.	p.c.	'000 kw.	p.c.
Newfoundland.....	34	11.8	95	3.7
Prince Edward Island.....	26	11.3	—	—
Nova Scotia.....	270	11.8	46	2.9
New Brunswick.....	154	8.0	95	6.2
Quebec.....	45	8.7	4,454	6.0
Ontario.....	2,046	22.1	2,951	7.0
Manitoba.....	284	...	148	2.6
Saskatchewan.....	541	14.7	89	6.2
Alberta.....	692	18.1	235	11.8
British Columbia.....	609	18.1	1,795	9.9
Yukon and Northwest Territories.....	5	...	22	6.2
Canada.....	4,706	17.5	9,930	6.6

¹ Compounded. A sustained annual percentage increase of 7.5 roughly indicates that the generating capability will double in ten years.

Table 5 shows, provincially, the amount of installed capacity and electricity generated in thermal stations in 1958, with percentage of total in each case. Preliminary figures for the electricity generated in 1959 are included.

5.—Installed Thermal Generating Capacity and Electricity Generated, by Province, 1958 and 1959

Province or Territory	Capacity in Thermal Stations		Generation by Thermal Stations			
	1958		1958		1959 ^a	
	Amount	P.C. of Total ¹	Amount	P.C. of Total ¹	Amount	P.C. of Total ¹
	'000 kw.		'000,000 kwh.		'000,000 kwh.	
Newfoundland.....	34	12.1	70	5.0	54	4.0
Prince Edward Island.....	26	99.4	62	99.1	71	100.0
Nova Scotia.....	291	69.5	917	58.7	966	58.9
New Brunswick.....	200	51.4	590	36.6	692	41.5
Quebec.....	78	1.1	218	0.5	209	0.5
Ontario.....	818	14.2	1,239	4.2	946	2.8
Manitoba.....	185	24.4	140	4.3	51	1.4
Saskatchewan.....	462	84.0	1,348	70.3	1,498	71.9
Alberta.....	515	70.0	1,737	63.7	2,231	72.6
British Columbia.....	262	10.4	628	5.3	603	4.9
Yukon and Northwest Territories.....	5	11.6	9	5.9	9	5.5
Canada.....	2,876	15.5	6,958	7.1	7,330	7.1

¹ Combined thermal and hydro generating capacity.

Table 6 gives a regional listing of the number of thermal stations and generating units by type of plant, basic fuel used, and total generating capacity as at the end of 1958—the latest analysis of these data available.

6.—Capacity of Thermal Generating Equipment, by Type of Plant, as at Dec. 31, 1958¹

Province	Type of Plant and Basic Fuel Used	Stations	Generating Units	Generating Capacity
		No.	No.	kw.
Nfld.....	Steam turbine (oil).....	2	3	20,000
	Internal combustion engine (oil).....	4	8	4,850
P.E.I.....	Steam turbine (oil).....	1	6	22,500
	Internal combustion engine (oil).....	2	10	2,986
N.S.....	Steam turbine (coal).....	9	29	292,805
	Internal combustion engine (oil).....	4	12	3,250
N.B.....	Steam turbine (coal and oil).....	10	36	166,750
	Internal combustion engine (oil).....	4	11	7,666
Que.....	Steam turbine (coal and oil).....	15	34	52,760
	Internal combustion engine (oil).....	11	26	8,354
Ont.....	Steam turbine (coal and oil).....	29	52	744,935
	Steam turbine—internal combustion engine (coal and oil).....	3	13	25,868
	Internal combustion engine (oil).....	10	22	8,056
Man.....	Steam turbine (coal and oil).....	4	12	181,000
	Internal combustion engine (oil).....	3	7	3,753
Sask.....	Steam turbine (coal, oil and natural gas).....	8	29	386,700
	Internal combustion engine (oil and natural gas).....	11	49	29,141
	Combination internal combustion engine and gas turbine (natural gas).....	1	5	29,000
Alta.....	Steam turbine (coal, oil and natural gas).....	11	23	257,600
	Combination steam turbine and gas turbine (natural gas and oil).....	3	15	191,375
	Internal combustion engine (oil and natural gas).....	15	49	18,513
	Gas turbine (natural gas).....	1	1	10,000
B.C.....	Steam turbine (oil and wood waste).....	18	48	112,610
	Steam turbine—internal combustion engine (oil and wood waste).....	1	2	1,800
	Internal combustion engine (oil and natural gas).....	41	161	82,892
	Gas turbine (oil).....	1	4	87,040
Yukon and N.W.T.	Steam turbine—internal combustion engine (oil).....	1	4	1,500
	Internal combustion engine (oil).....	6	19	2,841
Canada.....	Steam turbine.....	107	272	2,237,660
	Steam turbine—internal combustion engine.....	5	19	29,168
	Steam turbine—gas turbine.....	3	15	191,375
	Internal combustion engine.....	111	374	171,802
	Internal combustion engine—gas turbine.....	1	5	29,000
	Gas turbine.....	2	5	97,640
Grand Totals.....		229	690	2,756,045

¹ Prepared by the Fuels Division, Department of Mines and Technical Surveys, Ottawa.

Table 7 gives the maximum size of steam-driven turbo-generator units in thermal stations and shows clearly the trend toward the installation of larger and more efficient generating facilities capable of producing lower cost electric energy from the mineral fuels—coal, oil and natural gas.

**7.—Maximum Size of Turbo-Generator Units in Thermal Central Stations,
1945 and 1950-61¹**

Year	Eastern Canada		Central Canada		Western Canada	
	Megawatt Capacity	Units	Megawatt Capacity	Units	Megawatt Capacity	Units
		No.		No.		No.
1945.....	12.5	1	—	—	15	4
1950.....	15	1	6	1	30	1
1951.....	20	1	100	1	30	1
1952.....	20	1	100	3	30	1
1953.....	24	1	100	4	30	2
1954.....	24	1	100	44	30	2
1955.....	25	1	100	4	30	3
1956.....	25	1	100	4	66	1
1957.....	50	1	100	4	66	1
1958.....	50	1	100	4	66	2
1959.....	50	2	200	2	66	2
1960.....	50	2	200	4	150	1
1961.....	50	3	300	1	150	3

¹ Prepared by the Fuels Division, Department of Mines and Technical Surveys, Ottawa.

Heretofore, a fair proportion of the thermal generating capacity was operated at extremely low rates of load factor, particularly in small stations serving isolated communities, and as standby to hydro facilities. However, progressive increase in load and need for firmer output is making it economical to install larger and more efficient thermal units, essentially in the larger stations serving widespread system demands. Here the capacity is mainly provided by steam-motivated turbo-alternators, the largest of which are capable of generating a kilowatt-hour from a pound of coal. Still larger units, shortly to be installed, will be capable of generating a kilowatt-hour with as little as two-thirds of a pound of coal. From 1954 to 1958, nine gas-turbine-driven generating sets with capacities of from 8,400 to 30,000 kw. were installed in Western Canada and several more were in course of installation at the end of that period. These sets have the advantage of low first cost and extreme flexibility, and are well suited for peaking operations in an integrated system.

In 1958, thermal facilities provided 15.5 p.c. of the electricity generated in Canada and hydro facilities 84.5 p.c. Of the thermal generation, as much as 90.6 p.c. was provided by steam-driven equipment and 9.4 p.c. by diesel-engine and gas-turbine equipment.

Section 3.—Electric Power Statistics

Electric power statistics presented in this Section are based on reports of all electrical utilities and all industrial establishments that generate energy regardless of whether or not any is sold, and therefore show the total production and distribution of electric energy in Canada. Utilities are defined as companies, commissions, municipalities or individuals whose primary function is to sell most of the electric energy which they have either generated or purchased. Industrial establishments are defined as companies or individuals that generate electricity mainly for use in their own plants.

The current series of electric power statistics dates back only to 1956. Earlier reports, entitled "Central Electric Stations", were concerned solely with the electrical utility industry and hence excluded statistics relating to power produced by industrial establishments for their own use, although power sold by such establishments was included.

The figures of total water and thermal power generated for the years 1942-55 shown in Table 8 are compiled on the old basis, figures for 1956 are shown on both bases for comparative purposes, and those for later years are on the new basis.

8.—Electric Energy Generated, by Type of Station 1942-58, and by Province 1957 and 1958

Year and Province or Territory	Generated by—		Total	Year and Province or Territory	Generated by—		Total
	Water Power	Thermal Power			Water Power	Thermal Power	
	'000 kwh.	'000 kwh.	'000 kwh.		'000 kwh.	'000 kwh.	'000 kwh.
1942.....	36,582,953	772,226	37,355,179	1951.....	52,955,002	1,896,842	54,851,844
1943.....	39,660,312	819,281	40,479,593	1952.....	57,023,530	2,385,668	59,409,198
1944.....	39,553,352	1,045,427	40,598,779	1953.....	58,926,462	3,934,465	62,860,927
1945.....	39,131,020	999,034	40,130,054	1954.....	62,572,316	3,364,124	65,936,440
1946.....	40,692,395	1,044,592	41,736,987	1955.....	69,478,003	3,432,589	72,910,592
1947.....	42,273,167	1,151,632	43,424,799	1956.....	73,524,583	4,479,770	78,004,353
1948.....	41,070,095	1,319,586	42,389,681	1956 ¹	81,839,968 ¹	6,543,333 ¹	88,383,301 ¹
1949.....	42,779,199	1,639,374	44,418,573	1957 ¹	83,373,220	7,668,860 ¹	91,042,080 ¹
1950.....	46,624,218	1,869,500	48,493,718	1958 ¹	90,509,200	6,957,622	97,466,822
1957¹				1958¹			
Nfld.....	1,313,396	62,313 ¹	1,375,709 ¹	Nfld.....	1,340,843	70,329	1,411,172
P.E.I.....	370	56,618	56,988	P.E.I.....	537	62,497	63,034
N.S.....	526,493	1,007,344	1,533,837	N.S.....	645,600	917,142	1,562,742
N.B.....	706,464	698,297	1,404,761	N.B.....	1,023,020	589,662	1,612,682
Que.....	37,905,814	225,613	38,131,427	Que.....	43,418,062	217,506	43,635,568
Ont.....	27,959,037	2,153,403	30,112,440	Ont.....	28,012,573	1,238,807	29,251,380
Man.....	3,350,396	26,993	3,377,389	Man.....	3,113,166	139,854	3,253,020
Sask.....	568,020	1,200,224	1,766,344	Sask.....	568,480	1,347,716	1,916,196
Alta.....	807,253	1,624,649	2,431,902	Alta.....	990,457	1,737,298	2,727,755
B.C.....	10,116,336	607,701	10,724,037	B.C.....	11,254,743	627,960	11,882,703
Yukon and N.W.T.....	121,641	5,605	127,246	Yukon and N.W.T.....	141,719	8,851	150,570
Canada, 1957..	83,373,220	7,668,860¹	91,042,080¹	Canada, 1958..	90,509,200	6,957,622	97,466,822

¹ New series, see immediately preceding text.

Of the total generation in 1958 of 97,466,822,000 kwh., 92.9 p.c. was produced from water power and 7.1 p.c. was generated thermally; in 1957 total generation was 91,042,080,000 kwh. of which 91.6 p.c. was produced from water power and 8.4 p.c. thermally. The proportions generated in 1958 differed somewhat among provinces as shown in the following statement.

Province	Hydro	Thermal	Province or Territory	Hydro	Thermal
	p.c.	p.c.		p.c.	p.c.
Newfoundland.....	95.0	5.0	Manitoba.....	95.7	4.3
Prince Edward Island.....	0.9	99.1	Saskatchewan.....	29.7	70.3
Nova Scotia.....	41.3	58.7	Alberta.....	36.3	63.7
New Brunswick.....	63.4	36.6	British Columbia.....	94.7	5.3
Quebec.....	99.5	0.5	Yukon and N.W.T.....	94.1	5.9
Ontario.....	95.8	4.2			

Table 9 gives summary figures of power production and distribution classified by province and Tables 9 and 10 give figures classified by type of production establishment. Total installed capacity in Canada amounted to 18,559,368 kw. in 1958, an increase of 1,831,129 kw. over 1957. Of the 1958 total, 14,758,524 kw. were accounted for by utilities and the remainder by industrial establishments. During 1957 and 1958 total sales to ultimate customers amounted to 60,543,520,000 kwh. and 65,323,721,000 kwh. respectively, of which nearly 99.7 p.c. was sold each year by utilities.

Sales to power customers made up 62.9 p.c. of the total in 1957 and 61.6 p.c. in 1958, sales to domestic and farm customers were 26.2 p.c. and 26.5 p.c., and commercial sales 10.1 p.c. and 11.1 p.c. in the respective years.

Exports to the United States in 1958 amounted to 4,074,513,000 kwh. compared with 4,829,843,000 kwh. in 1957.

9.—Summary Electric Power Statistics, by Province, 1957 and 1958

Year and Province or Territory	Installed Generating Capacity	Energy Made Available in Canada	Exported to U.S.A.	Ultimate Customers	Total Revenue from Ultimate Customers	Electrical Utilities	
						Employees	Salaries and Wages
	kw.	'000 kwh.	'000 kwh.	No.	\$'000	No.	\$'000
1957							
Newfoundland.....	248,103	1,339,593 ^r	—	57,034	8,908	596	1,766
Prince Edward Island..	25,524	56,988	—	18,014	2,045	197	498
Nova Scotia.....	427,613	1,524,979	—	184,711	23,126	1,590	5,069
New Brunswick.....	396,591	1,383,793	48,649	139,761	17,019	1,133	3,835
Quebec.....	6,347,593 ^r	32,705,917 ^r	549,040	1,241,796	170,933	9,466	36,735
Ontario.....	5,000,842 ^r	31,223,491 ^r	4,222,225	1,742,199	253,284	16,184	71,477
Manitoba.....	657,104	3,758,502	22	258,849	29,465 ^r	2,416	8,387
Saskatchewan.....	459,945	1,236,719	—	220,069	27,242	1,875	6,534
Alberta.....	623,940	2,453,633 ^r	—	295,453	38,952	1,647	6,729
British Columbia.....	2,508,992	10,970,636	9,907	449,530	67,135	2,635	12,579
Yukon and N.W.T.....	31,992	127,246	—	3,762	1,889	78	343
Canada, 1957.....	16,728,239^r	86,781,497^r	4,829,843	4,611,178	639,998^r	37,817	153,952
1958							
Newfoundland.....	279,726	1,374,198	—	59,647	9,362	586	1,749
Prince Edward Island..	25,641	63,034	—	19,180	2,158	201	569
Nova Scotia.....	419,265	1,552,793	—	189,968	24,953	1,542	5,445
New Brunswick.....	389,337	1,496,335	142,789	145,779	18,676	1,142	3,968
Quebec.....	7,057,964	37,154,494	526,336	1,280,879	185,207	9,799	40,828
Ontario.....	5,775,746	32,047,621	3,404,051	1,827,832	267,585	16,409	76,082
Manitoba.....	758,962	3,757,372	28	267,186	31,127	2,513	9,321
Saskatchewan.....	550,652	1,419,247	—	230,309	29,947	2,141	9,477
Alberta.....	735,900	2,747,593	—	316,106	43,139	1,932	8,498
British Columbia.....	2,522,962	11,874,114	1,309	469,366	77,458	3,019	13,757
Yukon and N.W.T.....	43,213	150,570	—	3,882	2,091	110	517
Canada, 1958.....	18,559,368	93,637,371	4,074,513	4,809,634	691,703	39,394	170,211

10.—Summary Electric Power Statistics, by Type of Establishment, 1957 and 1958

Year and Item	Electrical Utilities			Industrial Establishments	Total
	Publicly Operated	Privately Operated	Total		
1957					
Installed generator capacity.....	kw.	5,020,004 ^r	13,039,575 ^r	3,688,664 ^r	16,728,239 ^r
Energy generated.....	'000 kwh.	26,406,382	71,522,994	19,519,086 ^r	91,042,080 ^r
Hydro.....	"	41,231,556	66,040,067	17,333,153	83,373,220
Thermal.....	"	3,885,056	5,482,927	2,186,933 ^r	7,668,860 ^r
Energy Made Available in Canada... '000 kwh.	...	...	...	...	86,781,497^r
Disposal of energy in Canada.....	'000 kwh.	42,564,327	25,651,933 ^r	68,216,260 ^r	68,425,295 ^r
Energy exported to United States.....	"	4,362,137	422,923	4,785,060	4,829,843
Ultimate customers in Canada.....	No.	3,192,761	1,403,902	4,596,663	4,611,178
Domestic and farm.....	"	2,779,436	1,211,589	3,991,025	4,004,800
Commercial.....	"	347,960	167,364	505,314	506,609
Power.....	"	62,829	32,764	95,593	96,720
Street lighting.....	"	2,546	2,185	4,731	4,749
Revenue from ultimate customers.....	\$'000	419,468	218,389 ^r	637,857 ^r	639,998 ^r
Revenue from exports to United States.....	"	15,744	1,836	17,580	17,782
Employees.....	No.	27,101	10,716	37,817	...
Salaries and wages.....	\$'000	110,420	43,532	153,952	...

10.—Summary Electric Power Statistics, by Type of Establishment, 1957 and 1958—concluded

Year and Item	Electrical Utilities			Industrial Establishments	Total	
	Publicly Operated	Privately Operated	Total			
1958						
Installed generator capacity.....	kw.	9,457,235	5,301,289	14,758,524	3,800,844	18,559,368
Energy generated.....	'000 kwh.	46,828,684	29,124,448	75,953,132	21,513,690	97,466,822
Hydro.....	"	43,585,617	27,585,651	71,171,268	19,337,932	90,509,200
Thermal.....	"	3,243,067	1,538,797	4,781,864	2,175,758	6,957,622
Energy Made Available in Canada... '000 kwh.	...	...	...	...	...	93,637,371
Disposal of energy in Canada.....	'000 kwh.	45,460,693	27,940,543	73,401,236	204,869	73,606,105
Energy exported to United States.....	"	3,547,427	443,651	3,991,078	83,435	4,074,513
Ultimate customers in Canada.....	No.	3,331,998	1,465,783	4,797,781	11,853	4,809,634
Domestic and farm.....	"	2,912,055	1,266,105	4,178,160	10,786	4,188,946
Commercial.....	"	352,433	162,587	515,070	943	516,018
Power.....	"	64,857	34,860	99,717	101	99,818
Street lighting.....	"	2,603	2,231	4,834	18	4,852
Revenue from ultimate customers.....	\$'000	452,239	237,446	689,685	2,018	691,703
Revenue from exports to United States.....	"	10,589	2,366	12,955	424	13,379
Employees.....	No.	28,149	11,245	39,394	..	..
Salaries and wages.....	\$'000	122,208	48,003	170,211	..	..

11.—Electric Power Generated classified by Type of Establishment, by Province, 1957 and 1958

Year and Province or Territory	Electrical Utilities		Industrial Establishments	Total
	Publicly Operated	Privately Operated		
	'000 kwh.	'000 kwh.	'000 kwh.	'000 kwh.
1957				
Newfoundland.....	597	981,818	393,294 ^r	1,375,709 ^r
Prince Edward Island.....	3,142	53,841	5	56,988
Nova Scotia.....	463,385	891,933	178,519	1,533,837
New Brunswick.....	599,624	383,309	421,828	1,404,761
Quebec.....	11,403,254	17,134,668	9,593,505	38,131,427
Ontario.....	26,414,536	1,585,153	2,112,751	30,112,440
Manitoba.....	3,341,021	—	36,388	3,377,389
Saskatchewan.....	1,019,672	658,745	87,927	1,766,344
Alberta.....	781,052	1,468,361	182,489	2,431,902
British Columbia.....	1,026,110	3,239,364	6,458,563	10,724,037
Yukon and Northwest Territories.....	64,219	9,190	53,837	127,246
Canada, 1957.....	45,116,612	26,406,382	19,519,086^r	91,042,080^r
1958				
Newfoundland.....	597	991,478	419,097	1,411,172
Prince Edward Island.....	3,142	59,887	5	63,034
Nova Scotia.....	508,975	890,491	163,276	1,562,742
New Brunswick.....	723,202	474,448	415,032	1,612,682
Quebec.....	12,804,471	19,232,311	11,598,786	43,635,568
Ontario.....	25,850,280	1,331,309	2,060,791	29,251,380
Manitoba.....	3,214,018	—	39,002	3,253,020
Saskatchewan.....	1,144,854	664,716	106,626	1,916,196
Alberta.....	846,817	1,626,867	254,071	2,727,755
British Columbia.....	1,638,495	3,842,193	6,402,015	11,882,703
Yukon and Northwest Territories.....	84,833	10,748	54,989	150,570
Canada, 1958.....	46,828,684	29,124,448	21,513,690	97,466,822

Average domestic and farm consumption rose from 3,960 kwh. in 1957 to 4,128 kwh. in 1958. Among the provinces the averages in 1958 varied from a low of 1,439 kwh. in Prince Edward Island to a high of 6,113 kwh. in Manitoba. For domestic and farm customers the average annual bill was \$66.49 in 1958 as against \$64.19 in 1957, an increase of 3.6 p.c.

Although many utilities do not keep records on farm customers separate from other domestic customers, the data reported on farm service indicate that the average consumption rose from 3,415 kwh. per customer in 1957 to 3,686 kwh. in 1958 and the average bill was \$86.46 in 1958 compared with \$80.80 in 1957.

12.—Domestic and Farm Service by Electrical Utilities and Industrial Establishments, 1939, 1945 and 1956-58

Item		1939	1945	1956	1957	1958
Customers.....	No.	1,623,672	1,987,360	3,634,964	4,004,200	4,188,946
Kilowatt-hours sold.....	'000	2,310,891	3,365,497	14,338,789	15,857,618	17,290,984
Revenue received.....	\$'000	43,793	55,736	235,497	257,038	278,531
Kilowatt-hours per customer.....	No.	1,423	1,663	3,739	3,960	4,128
Average annual bill.....	\$	26.97	28.05	61.41	64.19	66.49
Revenue per kwh.....	cts.	1.90	1.66	1.64	1.62	1.61

In 1958 coal accounted for 46.2 p.c. of thermal generation, natural gas for 40.2 p.c. and petroleum fuels for 13.6 p.c.; the percentages in 1957 were 55.4, 28.9 and 15.7, respectively.

13.—Fuel Used by Electrical Utilities to Generate Power, by Province, 1957 and 1958

Year and Province or Territory	Coal		Petroleum Fuels		Gas	
	Quantity	Value	Quantity	Value	Quantity	Value
	tons	\$	Imp. gal.	\$	'000 cu. ft.	\$
1957						
Newfoundland.....	—	—	359,895	103,405	—	—
Prince Edward Island.....	—	—	5,115,064	423,775	—	—
Nova Scotia.....	458,436	4,724,266	7,334,977	623,536	—	—
New Brunswick.....	211,595	2,067,620	2,375,693	268,362	—	—
Quebec.....	—	—	577,229	96,566	—	—
Ontario.....	722,275	6,227,947	914,243	211,048	—	—
Manitoba.....	6,377	30,610	278,875	57,898	—	—
Saskatchewan.....	449,467	1,180,338	42,408,223	2,647,026	3,380,108	951,596
Alberta.....	133,617	162,088	642,674	95,504	18,203,343	2,060,271
British Columbia.....	110	1,351	7,324,403	1,567,971	542,637	149,964
Yukon and Northwest Territories...	—	—	323,332	81,513	—	—
Totals, 1957.....	1,951,877	14,394,220	67,654,608	6,176,604	22,126,068	3,161,831
1958						
Newfoundland.....	—	—	796,232	86,565	—	—
Prince Edward Island.....	—	—	5,598,004	401,392	—	—
Nova Scotia.....	431,573	4,523,936	5,164,855	383,898	—	—
New Brunswick.....	144,498	1,450,347	1,803,145	205,474	—	—
Quebec.....	—	—	560,116	105,996	—	—
Ontario.....	316,561	2,784,018	872,617	160,362	—	—
Manitoba.....	97,108	457,305	296,071	61,161	506,482	171,998
Saskatchewan.....	502,394	1,207,760	30,741,651	1,727,977	7,149,693	2,048,312
Alberta.....	162,802	214,368	827,204	110,465	19,085,865	2,119,185
British Columbia.....	—	—	5,147,583	1,006,426	1,153,657	278,992
Yukon and Northwest Territories...	—	—	577,584	139,496	—	—
Totals, 1958.....	1,654,936	10,637,734	52,385,062	4,389,212	27,895,697	4,618,487

Section 4.—Water and Thermal Power Developments in the Provinces and Territories, 1959

For the second consecutive year, a record was established in the amount of new hydro-electric generating capacity brought into operation during a single calendar year. A total of 2,508,800 hp. of new capacity was installed during 1959, exceeding the previous record of 2,488,618 hp. completed in 1958. Installations under construction will add about 1,700,000 hp. during 1960 and another 2,300,000 hp. of new capacity is either under construction or in active prospect for development in succeeding years. Progress in hydro-electric and thermal-electric construction during 1959 is outlined below by provinces.

Atlantic Provinces.—In Newfoundland, the United Towns Electric Company Limited completed a single-unit 1,200-hp. development on New Chelsea Brook at Pitman's Pond, and ordered a new unit of about 3,200 hp. for installation by June 1960 to replace two units at Heart's Content on the Heart's Content River. The Iron Ore Company of Canada began construction to add a new 12,000-hp. unit in April 1960 at its Menihek Rapids development on the Ashuanipi River in Labrador. In active prospect were: the installation by the Newfoundland Light and Power Company Limited of a single-unit 6,500-hp. development on Middle Brook near Gambo; the installation of two 38,500-hp. units by the Southern Newfoundland Power and Development Limited as part of an ultimate development of 350,000 hp. in the Bay d'Espoir area of Newfoundland; and the installation of two 60,000-hp. units by the Hamilton Falls Power Corporation Limited as part of an ultimate development of 300,000 hp. at Scott Falls on the Unknown River in Labrador. In the field of thermal-electric construction, the Newfoundland Light and Power Company Limited completed the addition of a 20,000-kw. unit at its steam plant at St. John's.

In Prince Edward Island, the Maritime Electric Company Limited proceeded with the installation of a 10,000-kw. unit, scheduled for operation late in 1961 in the Company's steam plant at Charlottetown.

In Nova Scotia, the Nova Scotia Power Commission continued with the construction of two single-unit developments on the Sissiboo River. One of these, with a turbine capacity of 12,000 hp., is located at Weymouth Falls and is scheduled for operation in July 1960; the second development, rated at 8,000 hp., is expected to be in operation in March 1960 at Sissiboo Falls. The Commission has in active prospect a 10,800-hp. development at Riverdale, also on the Sissiboo River, and a 90,000-hp. installation on Wreck Cove Brook. The Nova Scotia Light and Power Company Limited began construction of a single-unit 7,500-hp. development on the Lequille River at Lequille which is expected to be in operation in 1961. The Company has in active prospect a single-unit 6,500-hp. development on the Nictaux River at Alpena. In the thermal-electric field, construction continued at the Nova Scotia Power Commission's steam plant at Trenton where a 20,000-kw. unit was scheduled for operation in April 1960. The Nova Scotia Light and Power Company Limited completed the installation of a 45,000-kw. unit at its Halifax steam plant and the Seaboard Power Corporation Limited added a new 16,000-kw. unit at its Sydney steam plant.

In New Brunswick, the New Brunswick Electric Power Commission acquired ownership of the 80,000-hp. Grand Falls generating station on the St. John River, formerly owned by the Gatineau Power Company Limited. At the Commission's Milltown development, a 500-hp. unit which was installed in 1910 and retired in 1920 was reconditioned and placed in service in June 1959. At Saint John, a new 50,000-kw. steam turbine plant was under construction, scheduled for completion in July 1961.

Quebec.—Quebec led the provinces in the amount of new hydro-electric capacity installed in 1959. Of the 1,457,800 hp. of new capacity placed in operation in the province, the Quebec Hydro-Electric Commission contributed about one-half. The Commission's Bersimis II development began initial operation when three units, each rated at 171,000 hp., were placed in operation; this development when completed in 1960 will have a

rated capacity of 855,000 hp. in five units. The third and final section of the Commission's Beauharnois development also began initial operation during 1959 when four units, each rated at 73,700 hp., were installed. By 1961 this section, consisting of ten 73,700-hp. units with provision for an eleventh, will be completed and the installed capacity of the over-all development will be 2,234,700 hp. The Commission started construction on a new power development on the Ottawa River at Carillon, some 50 miles from Montreal; the powerhouse will contain 14 units, each rated at 60,000 hp. Work was also started on the construction of an 80-mile road to provide access to the site of the proposed reservoir for the Manicouagan development.

The Aluminum Company of Canada began initial operation at its giant Chute des Passes development on the Peribonca River when three 200,000-hp. units were placed in service. With the completion of two more units in 1960, the development will have a rated capacity of 1,000,000 hp.

The James MacLaren Company Limited completed construction of a 50,000-hp. hydro-electric development in two units on the Lièvre River at Buckingham. A 1,500-hp. plant at that location ceased operation early in 1959.

The Quebec Cartier Mining Company continued construction of a power project on the Hart Jaune River, in the headwaters of the Manicouagan River. The powerhouse, located 27 miles upstream from Big Manicouagan Lake, will be completed late in 1960 with the installation of three 22,000-hp. units. Power will be supplied to the Company's mine site some 10 miles from the powerhouse.

Ontario.—During 1959, new hydro-electric capacity totalling 831,300 hp. was placed in service in Ontario, most of which was installed by The Hydro-Electric Power Commission of Ontario, Canada's largest power producing and distributing agency. The Commission was engaged in the construction of five hydro-electric developments during the year. Major construction was completed at the Robert H. Saunders-St. Lawrence Generating Station where nine 75,000-hp. units were added, raising the capacity of the Canadian portion of the development to 1,200,000 hp. in 16 units. The Commission also completed construction of its 60,000-hp. Silver Falls Generating Station on the Kaministiquia River and progress was made in the development of other sites in northern Ontario. A fifth unit rated at 66,000 hp. was installed at the Abitibi Canyon Generating Station on the Abitibi River raising installed capacity at this station to 330,000 hp. Construction continued at Red Rock Falls on the Mississagi River where the first of two units, each rated at 26,500 hp., should be in operation late in 1960. Installed capacity in northern Ontario will be further increased by the construction of a generating station at Otter Rapids on the Abitibi River where four 60,000-hp. units will be installed and minimum provision made for four additional units; the first two units are scheduled for service in 1961.

The Commission proposes to co-ordinate the development of these hydraulic resources with the construction of thermal-electric generating facilities in areas of concentrated load. The plan is to pool the output of a number of the hydraulic developments at a gathering station in the north and to bring it to load centres in southern parts of the province by extra-high-voltage transmission line, using voltages more than twice as high as those at present employed by the Commission. With this purpose in mind the Commission is conducting tests on an experimental high-voltage line in the vicinity of Coldwater, where conditions involved in the transmission of power at voltages from 400 to 600 kv. are being simulated.

The construction of thermal-electric stations is also being aggressively continued. At the Richard L. Hearn Generating Station at Toronto, the Commission added the first of four additional steam-turbines, each with a capacity of 268,000 hp. The remaining three units will be added in 1960, when the plant will consist of eight units totalling 1,608,000 hp. Further thermal-electric capacity is under construction in southern Ontario, involving installation of four 402,000-hp. units at the Lakeview Generating Station near Toronto. One unit is scheduled for completion in 1961 and the other three by 1964. Plans provide for a total installation of 2,400,000 hp. at this station. At Fort William, construction

continued on a steam turbine plant to consist of one unit of 134,000 hp.; however, if required, the site will permit the construction of a generating station having a capacity of 1,340,000 hp.

The Commission, in conjunction with Atomic Energy of Canada Limited and the Canadian General Electric Company Limited, is constructing, for completion in 1961, a 26,800-hp. Nuclear Power Demonstration plant near Des Joachims Generating Station on the Ontario side of the Ottawa River. In addition, several engineers of the Commission were assigned to aid the Nuclear Power Plant Division of Atomic Energy of Canada Limited in carrying out development work for a 268,000-hp. nuclear-electric generating station to be located on Lake Huron between Kincardine and Port Elgin. When it has been demonstrated to be a satisfactory source of power, it is proposed that the Commission will purchase this station at a price which will permit the production of energy at costs competitive with those of alternative energy sources.

Apart from the activities of the Commission, the Great Lakes Power Company completed the construction of its Hollingsworth Falls development on the Michipicoten River with the installation of a single 30,300-hp. unit.

Prairie Provinces.—In Manitoba, the Manitoba Hydro-Electric Board continued construction on the first-stage development of the Grand Rapid project on the Nelson River where five units of 42,000 hp. will be installed in 1960, with provision for a sixth similar unit. The power will be supplied to the mining project of the International Nickel Company in the Moak, Mystery and Thompson Lakes area of northern Manitoba. Work continued on the Board's Selkirk Generating Station where installation of two 66,000-kw. steam turbines will be completed in 1960, and construction proceeded on an interconnection between the Board's Brandon Generating Station and the Saskatchewan Power Corporation's Boundary Dam Generating Station.

In Saskatchewan, the Churchill River Power Company Limited, a subsidiary of the Hudson Bay Mining and Smelting Company Limited, completed the installation of a 19,000-hp. unit at Island Falls on the Churchill River, raising the installed capacity at the site to 125,500 hp. in seven units. In May, the Prairie Farm Rehabilitation Administration commenced construction of the main earth-fill dam for the South Saskatchewan River Project at the Coteau Creek site. Although the works are being constructed primarily for irrigation purposes, hydro-electric facilities will be incorporated by Saskatchewan at the dam. The initial installation will consist of three units of 50,000 or 60,000 hp. each, with provision for two similar units. The project is scheduled for completion in 1966. The Saskatchewan Power Corporation started the construction of a development in the Tobin Rapids-Squaw Rapids reach of the Saskatchewan River, 35 miles northeast of Nipawin. The development will consist of six units, each rated at 46,000 hp.; four units are planned for installation by 1963 and the remainder by 1964. During 1959, the Corporation doubled the capacity of its Queen Elizabeth steam turbine plant at Saskatoon with the addition of a second 66,000-kw. steam turbine unit. At the new Boundary Dam Generating Station at Estevan, the Corporation installed the first unit, a steam unit of 66,000 kw., and is constructing a second similar unit. A new 500-kw. diesel unit was added by Northland Utilities Limited to its plant at Uranium City.

In Alberta, Calgary Power Limited resumed construction on extensions to its Spray and Rundle plants located in the upper part of the Bow River basin. Both plants are scheduled for completion in late 1960 at which time the capacity of the Spray plant will be doubled by the addition of a 62,000-hp. unit and the Rundle plant will be almost trebled by the addition of a 40,000-hp. unit. The Company also began the installation of a single 200,000-hp. unit on the Brazeau River at Big Bend, about 15 miles upstream from the confluence with the North Saskatchewan River. Plans for this development call for the installation of additional units of the same size to an ultimate capacity of 800,000 hp. Investigation is under way for a hydro-electric development on the Saskatchewan River at Brazeau Forks, below the confluence with the Brazeau River. In the thermal-electric field, Calgary Power Limited proposes to begin installation in 1960 of a 150,000-kw. steam turbine as an addition to its 132,000-kw. Wabamun plant.

The City of Edmonton in 1959 increased the capacity of its municipally owned plant to 180,000 kw. in seven units by the addition of a 30,000-kw. gas turbine unit. A 500-kw. diesel unit was installed by Northland Utilities Limited at its Lac la Biche plant. Canadian Sugar Factories Limited plan to install a 1,675-kw. unit for service in 1960 at Taber.

British Columbia.—Hydro-electric construction was active in British Columbia during 1959. A total of 199,000 hp. of new capacity was added, the major part of it by the British Columbia Electric Company Limited which placed in operation two units of 82,000 hp. each at its Bridge River No. 2 plant. Two similar units will be added in 1960 at this plant, increasing the total installed capacity to 328,000 hp. Mission Dam, which is being built in conjunction with the No. 2 development, will raise the head at the Bridge River No. 1 plant and thereby increase its output from 248,000 hp. to 276,000 hp. The British Columbia Power Commission completed construction of its Ash River development with the installation of a single unit of 35,000 hp. and has two developments in the planning stage—a 51,500-hp. installation at Kokish River on Vancouver Island and the single 43,000-hp. unit Pyramid Mountain-Murtle River development with an expected ultimate capacity of 172,000 hp. in four units. Other hydro-electric facilities planned for the province include the installation by the Northern British Columbia Power Company Limited of a second 6,000-hp. unit at its Falls River development on Big Falls Creek and the development by the City of Revelstoke of a site on Cranberry Creek where one unit of 5,700 hp. will be installed and a second similar unit provided for.

In the field of thermal power, the British Columbia Electric Company Limited completed work on its Port Mann gas turbine plant located on the south bank of the Fraser River near New Westminster; four units, each with a generator capacity of 25,000 kw., were placed in operation. At Ioco, on Burrard Inlet, the Company continued construction of a large steam plant designed for an ultimate capacity of six units, each rated at 211,000 hp. The first unit is scheduled for operation in 1961, the second in 1962, the third in 1964 and subsequent units when required by load growth. At Chemainus on Vancouver Island, the British Columbia Power Commission completed the installation of the remaining two gas-turbine units in its Georgia generating station, increasing the generating capacity to 87,040 kw. in four units. Numerous smaller capacities were added at existing plants of the Commission including 3,000 kw. at Dawson Creek, 1,200 kw. at Chetwynd, 1,000 kw. at Smithers, and 252 kw. at Alert Bay. Other additions to plants of the Commission are planned or are in active prospect for installation in 1960 including 9,000 kw. at Prince George, 6,000 kw. at Quesnel, 3,000 kw. at Dawson Creek, 1,100 kw. at Port Hardy and 1,000 kw. at Smithers. The Northern British Columbia Power Company Limited added a diesel unit with generating capacity of 2,034 kw. to its plant at Prince Rupert and the British Columbia Refining Company Limited had a 1,250-kw. unit near completion at its Vancouver plant.

Northwest Territories and Yukon Territory.—The Northern Canada Power Commission began construction early in 1959 of a development on the Snare River which will provide 9,200 hp. in one unit late in 1960 and make provision for a second similar unit.

During the year a diesel generating unit of 1,000 kw. was installed at Yellowknife and another of 100 kw. at Fort Simpson, and a 600-kw. steam turbine unit was installed at Inuvik. New thermal capacities are proposed for 1960 including 1,000 kw. at both Frobisher Bay and Fort Smith, 750 kw. at Inuvik and 250 kw. at Fort Simpson. With the completion of the Commission's Whitehorse Rapids generating station, the Yukon Electrical Company dismantled its 750-kw. diesel plant at Whitehorse, but installed a 500-kw. diesel plant at Watson Lake and increased the capacity of its diesel plant at Haines Junction from 150 kw. to 600 kw.

Section 5.—Ownership and Regulation of Electrical Utilities*

Power is generated in Canada by publicly and privately operated utilities and by industrial establishments. Table 10, pp. 605-606, giving statistics by type of establishment, shows that 48 p.c. of the total electric power generated in 1958 was produced by publicly operated utilities, 30 p.c. by privately operated utilities and 22 p.c. by industrial establishments. However, ownership differs greatly in different areas of the country. Quebec output, for instance, is predominantly from privately owned plants since a large portion of the power development in that province is connected with pulp and paper establishments and with the aluminum industry. In Ontario, on the other hand, almost all electric power is produced by a publicly owned utility, The Hydro-Electric Power Commission of Ontario.

Because of the absence of free market determination of prices and regulation of services in an industry that is semi-monopolistic, regulation of electrical utilities has been attempted in most provinces. The governing bodies of the provincial electric power commissions, their functions and activities are summarized in the following paragraphs. Certain privately owned utilities are also covered.

Newfoundland.—There are no publicly owned hydro-electric systems in Newfoundland. The largest water power development in the province is located at Deer Lake. The plant, which is operated by Bowater's Newfoundland Pulp and Paper Company Limited, has a total capacity of 154,000 hp. This Company develops hydro-electric energy at Deer Lake mainly for its own use in the manufacture of pulp and paper and also supplies electric power to the Buchans Mining Company for its mining operations and to the Newfoundland Light and Power Company Limited which distributes electricity to consumers in Corner Brook and adjacent communities in the Bay of Islands sections, to the towns of Grand Falls, Windsor, Bishop's Falls, Botwood and Lewisporte, and to the International Airport at Gander and the Township of Gander nearby. The Company, in addition to its eight hydro plants, operates two steam generating plants at St. John's, having a total capacity of 30,000 kw.

The United Towns Electric Company Limited operates nine hydro plants and two diesel plants, the latter located on the Burin Peninsula. A subsidiary, the West Coast Power Company, operates diesel generators at St. George's and Port aux Basques, and a hydro plant at Lookout Brook. The Union Electric Light and Power Company operates plants at Clarenville, Port Union and Trinity.

Power plant construction recently completed or under way is outlined at p. 608.

Prince Edward Island.—The area of Prince Edward Island is only 2,184 sq. miles and, as 75 p.c. of its population lives in rural areas, electric power must be supplied to thickly populated rural districts interspersed with a considerable number of small municipalities. There is little opportunity for the development of hydro-electric power in the province since the rivers are short, drainage areas are small and the country is relatively flat. Therefore, power is generated mainly in thermal and diesel plants using imported fuels.

The Maritime Electric Company supplies 59,350,340 kwh. of the Island's power consumption of 67,282,200 kwh. with a system peak of 13,900 kw. from its Charlottetown plant. The plant consists of six steam turbines of 22,365 kw. total capacity. In 1958 the Company served 12,472 rural and urban customers over approximately 850 miles of Company-owned distribution line, with an additional 2,613 customers being served by 551 miles of distribution line owned by the provincial government and connected to the Company system. In addition, the Company supplies 6,899,240 kwh. of energy annually to the Town of Summerside Electric Light Department.

Two other power systems supply the remainder of the power consumed in the province. The Town of Summerside Electric Light Department operates a station in Summerside which is powered by nine diesel engines with a total capacity of 2,835 kw. and has an annual

* Revised by the various provincial commissions or authorities concerned.

energy production of 3,391,960 kwh. This system serves 2,175 customers within the corporate limits of the town and 824 customers over 75 miles of rural lines plus an additional 325 rural customers over 64 miles of lines owned by the provincial government. The Summerside station also supplies 712,500 kwh. of energy annually to the Scales Hydro-Electric Company Limited.

The Scales Hydro-Electric Company Limited operates a small station in Freetown on the Dunk River. Its total capacity is 250 kw., 175 kw. of which is generated by water power and the remainder by diesel engines. The annual energy production is 539,900 kwh. and 714 customers in surrounding areas are served over 29 miles of distribution line.

Nova Scotia.—The Nova Scotia Power Commission was created under the Power Commission Act of 1919 with the function of supplying electric power and energy by the most economical means available. The Rural Electrification Act of 1937 greatly increased the possibilities for retail service by providing financial assistance to equalize cost and revenue of extensions approved by the Governor in Council. In 1941 an amendment to the Power Commission Act authorized the Commission, subject to the approval of the Governor in Council, to regulate and control the generation, transmission, distribution, supply and use of power in the province. Certain investigatory work is carried on in the province by the Federal Government in close association with the Commission, but the control of water resources is vested in the Crown and administered under the provisions of the Nova Scotia Water Act of 1919. The Commission pays regular fees for water rights.

Financially the Commission is self-supporting, repaying borrowings from revenue. The balance sheet at Nov. 30, 1958 showed total fixed assets of \$51,685,234 including work in progress amounting to \$5,489,301. Current assets amounted to \$795,856. Liabilities were as follows: fixed \$42,224,276; current \$2,895,063; contingency and renewal reserves \$4,870,684; sinking fund reserves \$8,491,987; and general and special reserves \$2,090,766.

The initial development of the Commission was an 800-hp. installation on the Mushamush River which went into operation in 1921 and delivered 208,752 kwh. in the first complete year of operation. Succeeding years showed a marked growth in installed capacity which at Nov. 30, 1958 reached 113,000 hp. in hydraulic turbines, 2,200 hp. in diesel units and 40,000 kw. in steam turbines. Total generation for the year was 500,364,514 kwh.

The territory of the Commission extends over the entire province and embraces six systems which include 23 generating stations and more than 4,500 miles of transmission and distribution lines through which wholesale and retail customers received 499,816,954 kwh. during the year ended Nov. 30, 1958. Power plant construction recently completed or under way is outlined at p. 608.

14.—Capacity and Output of the Nova Scotia Power Commission, Year Ended Nov. 30, 1958

System ¹ and First Year of Operation	Present Installed Capacity	Output	System ¹ and First Year of Operation	Present Installed Capacity	Output
	hp.	kwh.		hp.	kwh.
Western Network—			St. Margaret (1921).....	15,700	37,820,800
Mushamush (1921).....	330	146,700	Mersey—		
Harmony (1943).....	1,200	4,575,575	Original development		
Roseway (1930).....	1,060	4,290,508	(1928).....	28,000	231,409,270
Gulch (1952).....	8,500	25,874,930	Cowie Falls (1938).....	10,200	
Ridge (1957).....	5,300	10,464,410	Deep Brook (1950).....	12,800	
Portable (diesel).....	...	30,248	Lower Great Brook		
Sissiboo Falls ².....	...	273,800	(1955).....	6,240	
Weymouth Falls ².....	...	198,900	Canseau (diesel) (1937).....	2,201	1,342,280
Eastern Network—			Canseau (thermal) (1945).. ³	1,125 ³	1,491,730
Barrie Brook (1940).....	500	2,672,460	Tusket (1929).....	2,820	15,460,152
Dickie Brook (1948).....	3,500	10,091,160			
Malay Falls (1924).....	5,440	13,172,900	Total.....	...	500,364,514
Ruth Falls (1925).....	10,590	39,152,800			
Liscomb (1957).....	700	3,648,091			
Trenton (thermal) (1951).. ³	40,000 ³	98,247,800			

¹ Hydro unless otherwise noted.

² Operated a few weeks and then dismantled.

³ Kilowatts.

New Brunswick.—The New Brunswick Electric Power Commission was incorporated under the Electric Power Act, 1920. Generating stations owned by the Commission at Mar. 31, 1959 were as follows:—

<u>Plant</u>	<u>Type</u>	<u>Capacity</u> hp.	<u>Plant</u>	<u>Type</u>	<u>Capacity</u> hp.
Musquash.....	Hydro.....	11,100	Saint John.....	Steam.....	21,450 ¹
Tobique.....	Hydro.....	27,000	Chatham.....	Steam.....	43,570 ¹
Beechwood.....	Hydro.....	90,000	Grand Manan.....	Diesel.....	1,140 ¹
Milltown.....	Hydro.....	3,500	Campobello.....	Diesel.....	320 ¹
Grand Lake.....	Steam.....	58,640 ¹			
			TOTAL CAPACITY.....		256,720

¹ Capacity rating of generators in kw. converted to hp.

All the above generating units with the exception of Grand Manan were interconnected in a province-wide grid system. The statistical information given in Table 15 shows the growth of the Commission's undertakings since 1955.

15.—Growth of the New Brunswick Electric Power Commission, Years Ended Mar. 31, 1955-59

Item	1955	1956	1957	1958	1959
High-voltage transmission line...miles	888	1,071	1,121	1,228	1,272
Distribution line..... "	6,891	6,937	7,100	7,168	7,286
Direct customers..... No.	66,531	69,415	76,490	79,550	84,025
Plant capacities..... hp.	140,570	140,570	166,250	256,720	256,720
Power generated..... kwh.	422,750,090	493,609,040	606,443,490	653,331,610	754,714,180
Capital invested..... \$	56,634,724	71,140,250	90,152,808	100,390,025	104,511,683
Revenue..... \$	8,528,459	9,635,272	11,286,117	12,182,120	13,527,290

Power plant construction recently completed or under way in New Brunswick is outlined at p. 608.

Quebec.—*The Quebec Streams Commission.*—Created by SQ 1910, c. 5, and given additional powers in 1912 (RSQ 1925, c. 46) and SQ 1930, c. 34, the Quebec Streams Commission was authorized to ascertain the water resources of the province, to make recommendations regarding their control, and to construct and operate certain storage dams to regulate the flow of streams. It assisted companies engaged in such work by the systematic collection of data on the flow of the principal rivers and on meteorological conditions, by investigation of numerous water power sites and by the determination of the longitudinal profile of a large number of rivers.

On Apr. 1, 1955, the Quebec Streams Commission was abolished and its powers and attributions transferred to the Hydraulic Resources Department, Province of Quebec. The rivers controlled by the Commission at the time of transfer, either by means of dams on the rivers or by regulating the outflow of lakes at the headwaters, were: the St. Maurice, the Gatineau, the Lievre, the St. Francis, the Chicoutimi, the Au Sable, and the Métis. The Commission also operated nine reservoirs on North River, two in the watershed of the Ste. Anne de Beaupré River, and one at the outlet of Lake Morin on Rivière du Loup (lower).

Other Reservoir Control.—Storage reservoirs otherwise controlled or operated are: the Lake St. John, the Lake Manouane and Passe Dangereuse on the Peribonca River, and the Onatchiway on the Shipshaw River; Témiscouata Lake on the Madawaska River, controlled by the Gatineau Power Company; Memphremagog Lake on the Magog River, controlled by the Dominion Textile Company; Témiscamingue and Quinze Lakes on the Ottawa River, controlled by the federal Department of Public Works; Kipawa Lake on the Ottawa River, controlled by the Gatineau Power Company; and Dozois Lake on the upper Ottawa River and Pipmaukin Lake in the Bersimis River watershed, controlled by the Quebec Hydro-Electric Commission.

Power developments on the Saguenay River, benefiting from the Peribonca and Lake St. John reservoirs, have a total capacity of 1,950,000 hp.

The Quebec Hydro-Electric Commission.—The Quebec Hydro-Electric Commission was established by SQ 1944, c. 22, with the object of supplying power to the municipalities, to industrial and commercial undertakings and to citizens of the Province of Quebec at the lowest rates consistent with sound financial administration. The Commission at the end of 1959 controlled, among other assets, the following hydro-electric plants: *—

<u>Plant</u>	<u>River</u>	<u>Installed Capacity</u>
		hp.
Cedars.....	St. Lawrence.....	206,400
Sault au Recollet.....	Rivière des Prairies.....	60,000
Beauharnois.....	St. Lawrence.....	1,694,000
Rapid VII.....	Upper Ottawa.....	64,000
Rapid II.....	Upper Ottawa.....	48,000
Bersimis No. 1.....	Bersimis.....	1,200,000
Bersimis No. 2.....	Bersimis.....	900,000

The Commission operates a public utility system which supplies the electric light and power requirements of Metropolitan Montreal and surrounding districts, embracing a population of nearly 2,000,000. From the Cedars plant, electric energy is supplied to the Aluminum Company of America at Massena, N.Y., and through the Beauharnois Light, Heat and Power Company power is sold to The Hydro-Electric Power Commission of Ontario. Sales involved are in the neighbourhood of 100,000 hp. to Massena, N.Y., and 250,000 hp. to Ontario.

* The Commission also purchases 135,000 hp. from the Shawinigan Water and Power Company.

16.—Growth of the Quebec Hydro System, 1950-59

NOTE.—Figures for the years 1935-46 will be found in the 1950 Year Book, p. 572, and for the years 1947-49 in the 1957-58 edition, p. 579.

Year	Municipalities Served	Customers Served	Power Distributed	
			Total	Primary
	No.	No.	hp.	hp.
1950.....	63*	360,045*	1,296,000	1,182,000
1951.....	66	380,171*	1,312,000	1,312,000
1952.....	67	395,066*	1,620,000	1,462,000
1953.....	67	413,439	1,748,000	1,625,000
1954.....	67	430,774*	1,700,000	1,687,000
1955.....	65	451,820*	1,760,000	1,725,000
1956.....	65	475,499*	2,061,000	1,955,000
1957.....	64	499,005	2,561,000	2,390,000
1958.....	64	521,279	2,736,000	2,671,000
1959.....	63	542,028	3,392,000	2,926,000

17.—Distribution of Quebec Hydro Primary Power, by Customer Group, 1953-59

(Coincident with Montreal System peak)

System	1953	1954	1955	1956	1957	1958	1959
	hp.	hp.	hp.	hp.	hp.	hp.	hp.
Montreal.....	997,000	1,117,000	1,230,000	1,351,000	1,436,000	1,617,000	1,698,000
Beauharnois (local).....	213,000	154,000	106,000	138,000	265,000	253,000	255,000
Beauharnois (Hydro).....	250,000	250,000	250,000	250,000	250,000	267,000	261,000
Massena.....	75,000	75,000	75,000	75,000	75,000	75,000	75,000
Shawinigan Water and Power Company.....	23,000	40,000	40,000	100,000	198,000	276,000	359,000
Gatineau.....	—	—	—	20,000	30,000	37,000	50,000
Gaspe.....	—	—	—	—	35,000	41,000	48,000
Northwestern.....	—	—	—	—	86,000	86,000	85,000
Chibougamau.....	—	—	—	—	15,000	19,000	25,000
Northeastern (local).....	—	—	—	—	—	—	70,000
Totals.....	1,558,000	1,636,000	1,701,000	1,944,000	2,390,000	2,671,000	2,926,000

The Commission delivers some 30,000 hp. on the south shore of the St. Lawrence River in the Gaspé area—power from its Bersimis plants transmitted across the River through a 69-kv. submarine cable, over a distance of 34 miles. The Commission also purchases about 25,000 hp. from Saguenay Transmission Company for delivery to mining companies in the Chibougamau area. It has completed the construction of a storage reservoir on the Toulmoustou River, a tributary of the Manicouagan River on the North Shore. The Lac Ste. Anne reservoir, as it is called, will permit regulation and control of the flow of the Lower Manicouagan River.

Power plant construction recently completed and under way in Quebec is outlined at pp. 608-609.

Ontario.—The Hydro-Electric Power Commission of Ontario is a corporate entity, a self-sustaining public enterprise endowed with broad powers with respect to the supply of electricity throughout the Province of Ontario. Its authority is derived from an Act of the Provincial Legislature passed in 1906 to give effect to recommendations of earlier advisory commissions that the water powers of Ontario should be conserved and developed for the benefit of the people of the province. It now operates under the Power Commission Act (SO 1907, c. 19) passed in 1907 as an amplification of the Act of 1906 and subsequently modified from time to time (RSO 1950, c. 281, as amended). In addition to administering the enterprise over which it has direct control, the Commission exercises certain regulatory functions with respect to the province-wide group of municipal electrical utilities which it serves.

The Commission may have from three to six members, all of whom are appointed by the Lieutenant-Governor in Council. One commissioner must be, and a second commissioner may be, a member of the Executive Council of the Province of Ontario. In the conduct of the Commission's affairs, the commissioners are responsible for, and are the final authority in, establishing policy.

The basic principle governing the financial operations of the Commission and its associated municipal utilities is that electrical service is provided at cost. The Commission interprets cost as including payments for power purchased, charges for operating and maintaining the power systems, and related fixed charges. The fixed charges represent interest on debt, provisions for depreciation, allocations to reserves for contingencies and rate stabilization, and the further provision of a sinking fund reserve for retiring the Commission's capital debt. While the enterprise from its inception has been self-sustaining, the province guarantees the payment of principal and interest on all bonds issued by the Commission and held by the public. In addition, over a period of nearly forty years the province has materially assisted the development of agriculture by contributing half the capital cost of rural distribution facilities.

For the financial and administrative purposes of the Commission, the province is divided into two parts.* The roughly triangular part of the province lying south of Lake Nipissing and the French and Mattawa Rivers is served by the Southern Ontario System, a fully integrated power network comprising the Niagara, Eastern Ontario and Georgian Bay Divisions. The part lying to the north is served by the Northern Ontario Properties, comprising the Northeastern and Northwestern Divisions. The Southern Ontario System is a co-operative system primarily serving a group of 327 municipalities receiving power at cost under contracts established according to the provisions of the Power Commission Act. The Northern Ontario Properties are not a co-operative system but the power facilities of its Northwestern Division serve a group of eight municipal utilities at cost. Apart from the supply of power to these cost-contract customers, the Northern Ontario Properties are held and operated in trust for the Province of Ontario. Each of the two northern divisions is an integrated power system, the Northeastern Division being also interconnected with the Southern Ontario System. For purposes of administration the whole area served by the Commission is subdivided into nine regions, seven in the south and two in the north, with regional offices located in nine major municipalities. At present the two northern regions coincide with the Northeastern and Northwestern Divisions.

The Commission is concerned primarily with the generation and purchase of power and its delivery in bulk over a province-wide network of transformation and transmission facilities. The sale of bulk power accounts for about 90 p.c. of the Commission's total kilowatt-hour sales. This power is delivered either for resale by other utilities, or for ultimate use in the industrial operations of some 200 customers served directly by the Commission. Deliveries for resale are made to the associated municipal electrical utilities, and to certain interconnected systems (some of them independent municipal systems) operating within or beyond the provincial boundaries. The municipal utilities, in their turn, administered by local commissions and functioning under the general supervision of the Provincial Commission, own and operate their own distribution systems to serve ultimate customers in most cities and towns, in many villages, and in certain township areas. Energy sales representing the remaining 10 p.c. of the Commission's total are carried out through Commission ownership and operation of distribution facilities. These facilities provide retail service on behalf of the various townships to ultimate customers in the rural areas of the province, and similar service to customers in a limited number of municipalities supplied by what are known as "Local Systems".

The growth of the Commission's physical and financial resources reflects the remarkable industrial and social development of the province. In 1914 the Commission purchased its first generating station—Big Chute on the Severn River. Later in the same year the first Commission-built generating station was placed in service at Wasdell Falls, also on the Severn River. This early program of purchase and construction of generating stations reached a climax in the great Queenston-Chippawa development, later renamed Sir Adam Beck-Niagara Generating Station No. 1 in honour of the first Chairman of the Commission. This station first delivered power in 1922 but four years later the Commission found it necessary to negotiate for the extensive purchase of power from large Quebec suppliers in order to satisfy Ontario's steadily growing power demands—demands that have continued to increase over the years. As requirements for power increased throughout the province, the Commission extended the scope of its service both by the purchase and integration of separate systems already in operation, and by the construction of new generating and distributing facilities.

The Commission's power development program as at Dec. 31, 1958 is given in Table 18. Hydro, thermal and nuclear power plant construction recently completed or under way in Ontario is outlined at pp. 609-610.

* Information relating to the establishment of the original administrative systems and to the consolidations leading to the present operating set-up is given in the 1957-58 Year Book, p. 580.

18.—Power Development Program of The Hydro-Electric Power Commission of Ontario, as at Dec. 31, 1958

System and Development	Units	In Service	Capacity ¹
	No.		kw.
Southern Ontario System—			
DeCew Falls (extension)—Niagara Region.....	1	1947	57,000
Stewartville—Madawaska River.....	3	1948	63,000
Des Joachims—Ottawa River.....	8	1950-51	372,000
Chenau—Ottawa River.....	8	1950-51	117,000
Richard L. Hearn—Toronto.....	4	1951-53	400,000*
	4	1959-60	800,000*
J. Clark Keith—Windsor.....	4	1951-53	264,000*
Otto Holden—Ottawa River.....	8	1952-53	210,000
Sir Adam Beck No. 2—Niagara River.....	16	1954-58	1,200,000*
Pumping generating station.....	6	1957-58	170,000*
Robert H. Saunders—St. Lawrence River.....	16	1958-59	940,000*
Nuclear Power Demonstration—near Des Joachims Generating Station...	1	1961	20,000*
Lakeview—near Toronto.....	2	1961-62	600,000*
Northern Ontario Properties—			
Northeastern Division—			
George W. Rayner—Mississagi River.....	2	1950	47,000
Abitibi Canyon (extension)—Abitibi River.....	1	1959	45,000
Red Rock Falls—Mississagi River.....	2	1960-61	38,000
Otter Rapids—Abitibi River.....	3	1961-62	131,000
Northwestern Division—			
Ear Falls (extension)—English River.....	1	1948	6,000
Aguaabon—Aguaabon River.....	2	1948	44,000
Pine Portage—Nipigon River.....	4	1950-54	119,200
Manitou Falls—English River.....	5	1956-58	65,700
Caribou Falls—English River.....	3	1958	67,500
Whitedog Falls—Winnipeg River.....	3	1958	53,700
Cameron Falls (extension)—Nipigon River.....	1	1958	19,100
Alexander (extension)—Nipigon River.....	1	1958	11,300
Silver Falls—Kaministiquia River.....	1	1959	45,500
Thunder Bay—Fort William.....	1	1961	100,000*

¹ Capacities quoted are dependable at time of system peak except those marked *, which are installed capacities.

19.—Resources of The Hydro-Electric Power Commission of Ontario Generated and Purchased (All Systems), December 1957 and 1958

Year and System	Commission's Generating Stations				Power Purchased	
	Hydro-electric ¹		Thermal-electric ¹			
	kw.	hp.	kw.	hp.	kw.	hp.
December 1957—						
Southern Ontario System.....	2,967,400	3,977,748	616,000	825,737	591,000	792,225
Northern Ontario Properties—						
Northeastern Division.....	297,400	398,660	1,800	2,413	1,200	1,609
Northwestern Division.....	366,000	490,617	—	—	3,300	4,424
Totals.....	3,630,800	4,867,025	617,800	828,150	595,500	798,258
December 1958—						
Southern Ontario System.....	3,722,400	4,989,812	616,000	825,737	592,000	793,566
Northern Ontario Properties—						
Northeastern Division.....	297,400	398,660	1,800	2,413	1,200	1,609
Northwestern Division.....	528,600	708,579	—	—	1,700	2,279
Totals.....	4,548,400	6,097,051	617,800	828,150	594,900	797,454

¹ Dependable peak capacity—the amount of power which resources can be expected to supply at the time of the system primary peak requirements, assuming that all units are available and that the supply of water is normal. This capacity will vary from time to time in accordance with changing conditions. The capacity of a source of purchased power is based on the terms of the purchase contract.

20.—Distribution of Power to Systems of The Hydro-Electric Power Commission of Ontario, Years Ended Dec. 31, 1954-58

NOTE.—Peak load generated and purchased, primary and secondary, in terms of generation.

System	1954	1955	1956	1957	1958
	kw.	kw.	kw.	kw.	kw.
Southern Ontario System	3,162,142	3,740,760	4,160,925	4,104,579	4,459,367
Northern Ontario Properties—					
Northeastern Division.....	332,706	366,458	391,442	459,117	469,048
Northwestern Division.....	283,896	329,122	356,737	406,880	489,121
Totals	3,778,744	4,436,340	4,909,104	4,970,576	5,417,536

21.—Growth of The Hydro-Electric Power Commission of Ontario, 1950-58

Year	Com- munities Served	Ultimate Customers Served Directly or Indirectly	Total Power Distributed ¹	Assets of Commission and Municipal Utilities
	No.	No.	kw.	\$
1950.....	1,132	1,187,117	2,714,565	1,080,200,039
1951.....	1,175	1,249,366	2,945,990	1,261,739,406
1952.....	1,244	1,317,249	3,330,286	1,442,511,467
1953.....	1,279	1,389,750	3,480,646	1,687,947,082
1954.....	1,301	1,467,034	3,778,744	1,883,311,970
1955.....	1,325	1,540,011	4,436,340	2,040,174,745
1956.....	1,340	1,612,049	4,909,104	2,293,492,487
1957.....	1,376	1,674,062	4,970,576	2,563,058,384
1958.....	1,387	1,757,405	5,417,536	2,756,758,142

¹ Sum of the maximum 20-minute coincident peak loads (primary plus secondary) of each of the systems operated by the Commission, given in terms of net output of the sources of supply to each system for the last month of each fiscal year.

During 1958 the Commission's investment in fixed assets increased by \$177,368,920 and at the end of the year amounted to \$2,107,975,634. Total assets after deducting accumulated depreciation were \$2,421,226,156.

In 1958 a total of 354 municipal utilities engaged in the retail distribution of electricity purchased power from the Commission under cost or fixed-rate contracts. The total assets of these utilities, after deducting accumulated depreciation, amounted to \$554,268,427, of which \$218,736,441 represented the equity acquired in the Commission's systems by the utilities operating under cost contracts.

Manitoba.—The Manitoba Power Commission, founded in 1919 by an Act of the Provincial Legislature, is charged with the responsibility of distributing electric energy throughout most of the province, with the exception of the Metropolitan Winnipeg area. In 1955 the Commission acquired, from the privately owned Winnipeg Electric Company and the City of Winnipeg Hydro Electric System, the distribution facilities serving the suburban areas immediately adjacent to the city. The Commission acts as a distributing agency only, purchasing electric energy "in bulk" from the Manitoba Hydro-Electric Board. Its more than 32,000 miles of transmission lines serve 532 cities, towns and villages. In addition, 42,093 farms, representing over 95 p.c. of the total resident occupied farms in the province, are electrified. In 1958 the Commission moved into the northern section of the province by acquiring the distribution and generating facilities at The Pas. This northern expansion has continued during 1959 when Cranberry Portage and the new mining centre of Thompson were added to the group of communities served.

Plant additions recently completed or under way in Manitoba are outlined at p. 610.

Saskatchewan.—The Saskatchewan Power Corporation was established Feb. 1, 1949, and now operates under the provisions of the Power Corporation Act (SS 1950, c. 10) as amended. It succeeded the Saskatchewan Power Commission which had operated from Feb. 11, 1929. The original functions of the Corporation included the generation, transmission, distribution, sale and supply of hydro and steam electric energy. Since 1952, the Corporation has been authorized to produce or purchase, and to transmit, distribute, sell and supply natural or manufactured gas.

In 1958, the Corporation served 875 urban communities (with six or more customers) in retail sales, and served the cities of Saskatoon, Swift Current and Weyburn, the town of Battleford and the hamlet of Waskesiu in bulk sales. Activities of the Corporation are extended to the entire province with the exception of such cities as Regina which owns and operates municipal plants and a distribution system, and Moose Jaw where the local plant and distribution system is owned and operated by National Light and Power Company Limited.

During the year, the distribution system and generating facilities of the town of Kamsack were purchased and added to the SPC system. At the end of 1958, the Corporation served 188,293 customers, 154,728 of whom were retail customers and 33,565 of whom were located in communities supplied with power through bulk sales. The retail customers included 104,173 urban customers and 50,555 customers classified as rural, predominantly farmers. During 1957, all customers absorbed 909,086,629 kwh., of which 880,721,720 kwh. were generated in Corporation plants and 28,364,909 kwh. were bought in bulk from Regina and from National Light and Power Utilities. At the end of the year, the Saskatchewan Government had invested a total of \$184,956,973 in Corporation electric and natural gas assets.

During 1958, the Corporation owned and operated four steam generating plants, one each at Estevan and Prince Albert and two at Saskatoon. These plants supplied 79.1 p.c. of total system power requirements. Three internal combustion gas and dual fuel plants at Kindersley, Swift Current and Unity supplied most of the remainder. Seven small diesel plants (at Leader, Central Butte, Meadow Lake, Yorkton, Kamsack, Hudson Bay and La Ronge) acted mainly as standby plants. Total system capability at the end of 1958 was assessed at 327,260 kw., with 275,000 kw. located in steam plants, 46,000 kw. in gas and dual fuel installations and 6,260 kw. in diesel plants.

By the end of 1958, the Corporation owned and operated 59,935.5 miles of transmission and rural lines (excluding urban distribution and hi-lines), 5,547.5 miles of which were added in 1958. Forty-eight miles of three-phase transmission line for service to oilfields were also installed and service extended to 352 oil-well pumping units of various classes. Five switching stations were completed and energized.

Plant additions recently completed or under way in Saskatchewan are outlined at p. 610.

22.—Growth of the Saskatchewan Power Corporation, 1949-58

Year	Communities Served in Bulk and Retail Sales	Individual Meters in Communities Served	Power Distributed	Revenue
	No.	No.	kwh.	\$
1949.....	420	78,389	202,135,947	5,629,372
1950.....	454	84,361	235,926,656	6,363,597
1951.....	535	93,923	278,826,919	7,159,876
1952.....	582	107,942	332,674,176	8,553,619
1953.....	631	122,676	398,211,673	10,363,752
1954.....	664	134,587	472,763,014	11,936,234
1955.....	742	149,134	556,776,981	13,350,177
1956.....	799	162,594	659,720,877	15,566,910
1957.....	870	178,567	780,613,534	18,152,460
1958.....	880	188,293	909,086,629	20,687,771

Alberta.—Public ownership of power generating and distributing systems in Alberta is confined to certain urban municipalities. The regulatory authority over privately owned systems is the Board of Public Utility Commissioners which has jurisdiction over the distribution and sale of electricity. The Board has power to hold investigation upon complaint made either by a municipality or by a utility company and, following such investigation, may fix just and reasonable rates.

There are three private utility services in the province: Calgary Power Limited, Canadian Utilities Limited, and Northland Utilities Limited. A synopsis of these services is given below; plant additions recently completed or under way are outlined at pp. 610-611.

Calgary Power Limited.—This Company has 11 hydro generating plants on the Bow River and its tributaries, west of Calgary: Horseshoe Falls, Kananaskis Falls, Ghost River, Cascade, Barrier, Spray, Rundle, Three Sisters, Bears paw, Pocatererra, and Interlakes. The Company also operates a steam plant of 176,000 hp. at Wabamun, west of Edmonton. At Dec. 31, 1959, the Company's total plant capacity was 485,450 hp. All the hydro plants except Bears paw are operated by remote control from the Kananaskis Falls plant.

The Company has five reservoirs on the Bow River and its tributaries:—

Lake Minnewanka.....	180,000 acre-feet
Interlakes (Upper Kananaskis Lake).....	100,000 acre-feet
Pocatererra (Lower Kananaskis Lake).....	50,000 acre-feet
Spray Lakes.....	200,000 acre-feet
Ghost.....	74,000 acre-feet

An agreement with the City of Medicine Hat provides an additional 33,500 hp. to the Company from the city's steam plant. Power from these plants is fed into a transmission network which supplies the entire electricity requirements of the cities of Calgary, Red Deer, Wetaskiwin and Camrose, about 436 towns, villages and hamlets, and a substantial industrial load in central and southern Alberta. This transmission network is also connected with the municipal utilities of the cities of Edmonton and Lethbridge, Canadian Utilities Limited at Drumheller, Vegreville and Vermilion, and the East Kootenay Power Company in the Crownsnest Pass.

The Company has about 4,900 miles of main transmission lines and 3,100 miles of distribution lines extending from Plamondon in the north to Milk River and Waterton in the south, and from Chauvin, Macklin (Sask.), Brooks and Bow Island in the east to Nordegg, Banff and Crownsnest Pass in the west. The cities of Calgary and Red Deer and the towns of Ponoka, Fort Macleod and Cardston are supplied on a wholesale basis, but all other points on the same system are supplied on a retail basis. At Dec. 31, 1959, electric pumping service was being supplied to more than 3,900 oil wells, as well as direct service to such other sectors of the oil industry as gathering stations, refineries and pipeline pumping. Several industrial plants near Edmonton were also served.

An extensive farm electrification program is in progress in Alberta and at Dec. 31, 1959 the Company was serving 35,018 farms. Calgary Power constructs, operates and provides for the engineering of these co-operatives through a non-profit subsidiary (Farm Electric Services Limited) and energy is supplied to the farm co-operative consumers at cost.

Canadian Utilities, Limited.—This Company supplies three areas in the province: the Grande Prairie District, outlined by Hythe, Spirit River, Lesser Slave Lake, Smith, Fox Creek and the city of Grande Prairie; the Vegreville District, outlined by Vermilion, Vegreville, Smoky Lake, Cold Lake and the city of Lloydminster; and the Drumheller District, outlined by Three Hills, Stettler, Forestburg, Consort, Empress, Cessford and the city of Drumheller. Three interconnected plants at Battle River, Vermilion and Drumheller supply the Vegreville and Drumheller districts. The Battle River plant has a 32,000-kw. coal-fired steam unit; the Vermilion plant has a 8,500-kw. gas turbine (the first gas turbine powered generator in Canada) and 9,000 kw. in gas-fired steam equipment; and the

Drumheller plant has 19,000 kw. in coal-fired steam equipment. Three interconnected plants at Grande Prairie, Fairview and Sturgeon Lake supply the Grande Prairie District. The Grande Prairie plant has 5,700 kw. in diesel and gas-diesel equipment; at Fairview there is a 1,200-kw. natural gas unit, and at Sturgeon Lake a 10,000 kw. gas turbine which uses sour flare gas from nearby oilfields as fuel. The town of Smith is served separately by a 425-kw. diesel installation. In 1959 the Company installed 150 kw. in diesel units to serve the settlement of Fort Chipewyan on Lake Athabasca.

There are tie lines with Calgary Power Limited at Vermilion, Vegreville and Drumheller; and with Northland Utilities Limited at Fairview and Valleyview. The Company serves more than 41,500 customers (covering approximately 33,000 sq. miles, including 225 towns, villages and hamlets, and 131 rural electrification associations) through a network of approximately 3,900 miles of transmission and distribution lines, and 10,000 miles of Rural Electrification Association lines.

Since 1949, rural electrification in the territory served has been extended to more than 10,400 farmers on a co-operative basis whereby the Rural Electrification Association systems are constructed and operated at cost for the farmers. In addition, the Company operates three subsidiaries, McMurray Light and Power Co. Limited, with a 525-kw. installation, serving 330 customers in the town of McMurray; and Yukon Hydro Company Limited and the Yukon Electrical Company Limited, operating three installations consisting of 1,650 kw. in hydro units and 1,100 in diesel units serving 1,580 customers in the Whitehorse, Haines Junction, and Watson Lake areas of the Yukon Territory.

Northland Utilities Limited.—This Company, with headquarters at Edmonton, supplies electric service to 9,700 customers located in 33 communities. Diesel or gas-fueled generating plants are located in Jasper, Athabasca, High Prairie, Fort Vermilion, McLennan, Peace River, Fairview and Lac la Biche in Alberta, and at Hay River in the Northwest Territories. A hydro-electric generating plant augments the supply at Jasper. Through 175 miles of 69,000-volt transmission line and 250 miles of 24,000-volt transmission line, service is distributed to 27 additional communities and approximately 2,000 farm customers are served by rural co-operative lines. A subsidiary, Uranium City Power Company Limited, generates and distributes electricity to 600 customers in Uranium City, Sask.

Northland Utilities supplies 3,500 customers with natural gas in 15 communities in northern Alberta—Fairview, Bluesky, Whitelaw, Brownvale, Berwyn, Grimshaw, Grande Prairie, Spirit River, Sexsmith, Rycroft, Woking, Clairmont, Peace River, High Prairie and Jasper. A subsidiary, Northland Utilities (B.C.) Limited, supplies gas to 2,500 customers in Dawson Creek and Pouce Coupe, B.C.

British Columbia.—The British Columbia Power Commission was appointed Apr. 17, 1945 under the provisions of the Provincial Electric Power Act. Operations were commenced in August of the same year with the acquisition* of electrical properties in several parts of the province. The following statement shows the growth in the number of customers from 1949 to 1959:—

Year Ended Mar. 31—	Services Acquired	Services Installed	Total Services for Period	Cumulative Services to End of Period
	No.	No.	No.	No.
1949.....	831	3,318	4,149	31,619
1950.....	4,686	3,321	8,007	39,626
1951.....	473	4,075	4,548	44,174
1952.....	103	2,600	2,703	45,912
Sold June 1951.....	-325	-640	-965	
1953.....	—	3,597	3,597	49,509
1954.....	—	3,264	3,264	52,773
1955.....	523	3,261	3,784	56,557
1956.....	406	4,382	4,788	61,345
1957.....	4,676	5,525	10,201	69,574
Sold May 1956.....	-337	-1,635	-1,972	
1958.....	—	5,706	5,706	75,280
1959.....	75	4,506	4,581	79,861
TOTALS.....	32,532	47,329	79,861	79,861

During the year ended Mar. 31, 1959, there was a marked reduction in the rate of capital expenditure by the Commission as compared with the previous two fiscal years. Expenditure during this period totalled \$18,483,000 as against the all-time high in 1957-58 of \$51,341,000. As a result of recent expansion, the Commission, for the first time in several years, had sufficient capacity to meet all current and immediately foreseeable demands upon its system. (Details of construction recently completed or under way are outlined on p. 611.) Revenue in 1958-59 increased by 17.9 p.c. over 1957-58 and expenses by 13.3 p.c. Net operating surplus amounted to \$97,492 after provision for hydro deficiency reserve.

23.—Growth of the British Columbia Power Commission, Years Ended Mar. 31, 1955-59

Item	1955	1956	1957	1958	1959
Customers..... No.	56,577	61,345	69,574	75,280	79,861
Installed plant capacity..... kw.	176,866	211,366	284,435	324,735	385,771
Circuit Miles of Line—					
Transmission (high voltage).....miles	689	795	1,009	1,330	1,415
Distribution primaries.....“	3,301	3,781	4,147	4,650	4,949
Power Requirements—					
Generated..... kwh.	812,793,062	955,007,458	1,058,915,734	984,810,523	1,597,961,498
Purchased.....“	12,016,339	24,023,708	25,668,700	228,760,010	46,124,718
Totals, Power Requirements.... kwh.	824,809,401	979,031,166	1,084,584,434	1,213,570,533	1,644,086,216
Annual revenue..... \$	8,227,331	9,730,576	11,992,259	14,523,888	17,131,492
Capital Investment (plant in operation)—					
Generation plant..... \$	35,100,468	44,741,367	55,595,538	82,844,306	115,743,698
Transmission plant..... \$	13,204,511	15,289,408	20,639,658	24,678,764	28,487,058
Distribution and general plants. \$	18,095,779	21,791,399	25,783,408	30,031,507	32,724,097
Totals, Capital Investment (plant in operation)..... \$	66,400,758	81,822,174	102,018,604	137,554,577	176,954,853

Sources of power for the year ended Mar. 31, 1959 were as follows:—

Source	Power	Percentage of Total
	kwh.	
Hydro-electric plant.....	1,434,537,265	87.3
Diesel-electric plant—		
Oil fuel.....	45,552,586	2.8
Gas fuel.....	114,039,647	6.9
Gas-turbine plant.....	3,832,000	0.2
Purchased.....	46,124,718	2.8
TOTALS.....	1,644,086,216	100.0

The Northwest Territories and Yukon Territory.—The Northern Canada Power Commission was created by Act of Parliament in 1948 to bring electric power to points in the Northwest Territories where a need developed and where power could be provided on a self-sustaining basis. By legislation passed in 1950, the Act was extended to include Yukon Territory. The name of the Commission, formerly Northwest Territories Power Commission, was changed in 1956.

The Northern Canada Power Commission has authority to construct and operate power plants as required in the northern territories and, subject to approval of the Governor in Council, in any other parts of Canada.

The Commission has hydro-electric power developments on the Yukon River near Whitehorse, Y.T., the Mayo River near Mayo Landing, Y.T., and the Snare River northwest of Yellowknife, N.W.T. Diesel-electric plants are operated at Fort Simpson, Fort Smith and Inuvik, N.W.T., at Field, B.C., and at Frobisher Bay, N.W.T., where the plant is owned by the Department of Transport.

The Whitehorse Rapids Power Development went into service in November 1958, and supplies all the power for the Department of National Defence at Whitehorse, a large part of the power for the city of Whitehorse, and the power for the heating systems of the Department of National Health and Welfare Hospital and two hostels operated by the Department of Citizenship and Immigration.

The Snare River Rapids plant has supplied power to the mines in the Yellowknife area since September 1948 and, with the Bluefish hydro-electric plant of the Consolidated Mining and Smelting Company of Canada Limited, supplies the town of Yellowknife.

The Mayo River plant, completed in November 1952, supplies power to mining properties in the Elsa and Keno areas and to the Mayo Landing and Keno City communities.

The diesel-electric plants supply the needs of Federal Government departments and general residents of the communities in which they are located. In addition to these plants, the Commission operates a power and heating plant at the Fort McPherson residential school for the Department of Northern Affairs and National Resources. Recently completed and projected construction is outlined at p. 610.

CHAPTER XIII.—FISHERIES AND FURS

CONSPECTUS

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NOTE.—The interpretation of the symbols used in the tables throughout the Year Book will be found on p. 1 of this volume.

PART I.—FISHERIES

Section 1.—Fishery Resources

Canada has the enviable position of being the country closest to some of the world's most prolific fishing grounds and as a consequence is a principal fish producer and exporter of fish products. Rich harvests are drawn from the Atlantic and Pacific Oceans and from the country's many freshwater lakes and rivers. The following special article, which gives a detailed account of Canada's commercial fisheries resources, places special emphasis on the conservation aspect of the responsibilities of the Department of Fisheries of Canada.

CANADA'S COMMERCIAL FISHERY RESOURCES AND THEIR CONSERVATION*

Every year Canadian fishermen take some 2,000,000,000 lb. of fish and shellfish from the salt and fresh water available to them off the Pacific and Atlantic Coasts and in the rivers and lakes of the inland provinces. The marketed value of this catch is in excess of \$200,000,000. Two-thirds of the output is shipped abroad, putting Canada in third place among the fish-exporting nations, surpassed only by Norway and Japan. The primary fishing industry in Canada supports the families of over 79,000 fishermen, and many thousands of persons employed in processing plants, in transporting and marketing enterprises and in ancillary industries also benefit in varying degrees.

With direct access to three of the world's five oceans, Canada with its coastal islands has a sea front of about 60,000 miles, which is more than twice the length of the equator. Even more remarkable, 260,000 sq. miles of lakes and rivers, half the fresh water of the entire earth, are within Canadian boundaries.

Pacific Fisheries.—On the Pacific, salmon provides the most valuable catch and herring the heaviest landings. Halibut is third in importance, followed by groundfish and shellfish. In 1958, a high year in salmon cycles, total landed value of the Pacific

* Prepared by the Information and Educational Service, Department of Fisheries, Ottawa.

catch exceeded \$50,000,000, of which salmon accounted for \$37,000,000. Lower landings of salmon in 1959 caused a 30-p.c. drop in the value of the Pacific catch, which amounted to a little less than \$35,500,000.

The salmon catch comprises five species—sockeye, pinks, chums, cohos and springs. These fish are caught as they return from the sea to their native streams to spawn and die. Sockeye, for instance, return after four years at sea so that, four years after a favourable hatching year on sockeye streams, a heavy catch of this species may be expected. When the peak runs of several different species occur in the same year, fishing is very good. The fish congregate off the mouths of their rivers and move into them in heavy concentrations. Commercial salmon fishing is limited to tide-water and is divided into two efforts—net fishery by seine and gillnet for the canneries and troll fishery for the fresh fish market. Net fishing is pursued in all the protected waters of British Columbia's deeply indented shoreline, and troll fishing off coasts facing the open sea, especially off the western coast of Vancouver Island.

After hatching, sockeye spend a year or two in a lake before going to sea. When caught on their return from the ocean they weigh about six pounds each. This is a summer fishery, usually from mid-June to September; the bulk of the catch is taken by gillnet and the remainder by purse-seine. As sockeye feed on small crustaceans, they are not attracted by the lures of the troll fishery. Landings are smaller than the catch of chums or pinks but more valuable because, with its firm texture and attractive colour, canned sockeye commands the highest consumer price.

Pink salmon mature and return after only two years at sea. The fish average four⁶ to five pounds. Both pinks and chums are widely distributed up and down the coast but pinks appear in a more concentrated run. Chums return after four years at sea when they average about ten pounds in weight. They usually appear in two rather scattered runs, one in early summer and one in the autumn, and contribute somewhat more than pinks to the total volume of the salmon catch.

Coho hatch in small streams and are vulnerable to summer water levels. At sea they grow rapidly to weights between five and ten pounds and return to spawn after three years. They are taken by net or troll for canning or for the fresh market, depending on current demand.

Mature spring salmon usually run between ten and twenty-five pounds in weight. Since they feed on small fish, they can, like coho, be taken by lure but about one-third of the catch is secured with gillnets, notably at the mouth of the Fraser. They are usually caught in their third or fourth year and are favoured on the fresh fish market.

About three-quarters of the annual salmon catch is canned and most of the remainder goes to the fresh market. Vancouver and Prince Rupert are the main processing centres. Hundreds of seiners and thousands of gillnet and troll boats engage in the fishery every year.

The 1959 catch of Pacific herring amounted to 443,000,000 lb. valued at more than \$7,000,000. The main stocks of the species move inshore in the autumn and winter, spawn in the spring and then return to summer feeding grounds offshore. Only small stocks remain on the fishing grounds throughout the year. Consequently the bulk of the catch is taken from October to March. As the total known supply of this species in British Columbia is being exploited, catches are limited to local quotas by area. Fishing is by purse-seine and the catch is converted into oil and meal, mainly at Steveston, Vancouver or Prince Rupert.

While salmon and herring live at mid-water depths, halibut feed on the bottom and are usually caught beyond the three-mile limit. Canadian and American longliners share in this fishery off both Alaska and British Columbia and, by joint agreement, it is controlled by a system of catch quotas and fishing seasons in various areas. The most productive halibut grounds on the Continent are those adjacent to British Columbia, and American as well as Canadian vessels, even when fishing off Alaska, usually land at Prince

Rupert or Vancouver. Because of bad weather and for other reasons, halibuting did not reach peak activity in 1959 but Canadian fishermen caught about 30,000,000 lb. with a landed value of between \$5,000,000 and \$6,000,000. Much of the fish is frozen for the fresh market in the United States.

Two other species of bottom-feeding fish—soles and grey cod—are taken by the trawler fleet, usually beyond the three-mile limit either in Hecate Strait or off Vancouver Island. These vessels drag a large-mouthed, tapering net across the ocean floor and scoop up the fish feeding there. They operate mainly in the spring and summer and on smooth bottom in depths between twenty and seventy fathoms. During the winter they pursue a limited fishery in the relatively protected waters of the Strait of Georgia. Ling cod and black cod also feed on the bottom. Small boats rigged with one or two lines and a few hooks take most of the ling cod catch in the Strait of Georgia but further supplies are captured together with other groundfish in course of the trawler fishery. The bulk of the black cod is taken off Alaska by the large longliners which also fish for halibut. These vessels lay their long lines on the ocean floor with hundreds of baited hooks attached to them.

All groundfish, including halibut, are marketed mainly in filleted or steak form, usually fresh or frozen but occasionally smoked.

Canada's Pacific groundfishery developed rapidly during and just after World War II when there was world-wide urgent need for greater protein food supplies. Expanding from almost negligible proportions in the prewar decade, landings now often exceed 20,000,000 lb. annually. One feature of this growth, especially recently, has been an increasing trade in coarse fish for mink feed.

British Columbia also has a considerable shellfish resource, including crabs, oysters, shrimps and clams. The crab fishery, centred in the northern Queen Charlotte Islands, has developed in response to steady market demand. Crabs are trapped from the low-tide mark to a depth of about 120 feet and are marketed either fresh or canned. The oyster industry is predicated on yearly import of spat from Japan, native supplies having been fished out many years ago and attempts to transplant Atlantic oysters having achieved very limited success. The present fishery is located in the Strait of Georgia. The oysters are larger than the Atlantic variety and are not eaten raw. They are shucked for market and sold fresh or frozen. Shrimp trawling in the Strait of Georgia is an off-season source of income for salmon troll or gillnet boats. Shrimps are cooked before the meat is taken from the shell to be sold fresh or frozen. Razor clams occur in the Queen Charlottes and butter clams in many small areas of suitable beach along the full length of the coast. Both kinds are dug by Indians and canned. Little neck clams, virtually limited to Vancouver Island, are mainly exported fresh to the United States market.

Earnings of British Columbia fishermen fluctuate widely with the ups and downs of the salmon and herring fisheries. Landings in 1958 included nearly \$40,000,000 worth of salmon, \$7,000,000 worth of herring and \$6,000,000 worth of halibut, together with groundfish and shellfish catches worth upwards of \$1,000,000 each. In 1959 the values were similar except for salmon; the exceptionally good salmon figure for 1958 was almost halved in 1959. Processing more than doubles all these values.

Atlantic Fisheries.—On the Atlantic Coast groundfish, especially cod, and lobsters are the mainstay of the fisheries, while herring, mackerel and alewives supply a pickling industry which is also of considerable importance. The Atlantic catch is ordinarily about twice as heavy as the Pacific and, generally, is more valuable.

The cod banks in the Atlantic off Newfoundland are known to fishermen all over the world. Besides cod, they yield other groundfish, mainly haddock, redfish, plaice and flounder. Although two-thirds of the cod catch is landed in Newfoundland, the lesser part of the Island's receipts now come from the banks. The traditional Newfoundland schooner fishery which formerly supplied the saltfish trade has died out but a very active inshore summer trap fishery, followed by a trawl fishery from small boats in the late summer

and early autumn, continues to supply the industry. The bulk of the trap and trawl catches is salted. The family business which combines fishing with processing has disappeared from the Atlantic Coast except in Newfoundland, and even there it is diminishing. Nova Scotia's drying plants depend more and more on raw supplies from Newfoundland, which they receive in salt bulk form. Heavy exports of saltfish go from the Atlantic Provinces to the Caribbean area, with smaller amounts to Italy, Spain and Brazil.

Although schooner fleets are a thing of the past, except for a few vessels sailing from Nova Scotia, modern trawlers and draggers out of ports along the southern coast of Newfoundland and the Atlantic Coast of Nova Scotia fish the banks in all seasons, weather permitting, to supply mixed groundfish to the processing plants in their home ports. These produce fresh and frozen fish and fillets as well as frozen fish blocks to meet a North American demand which increases steadily with the population. The frozen blocks are the raw material of the now important fish-stick industry.

In 1959 the lobster catch amounted to 46,000,000 lb. and the cod catch to 642,000,000 lb., each estimated to have a landed value of about \$17,000,000. With their relatively high unit prices, lobsters are the main source of income for fishermen in New Brunswick and Prince Edward Island, besides providing about one-third of the value of the Nova Scotia catch. They are taken in baited traps as they crawl about in shallow water looking for food. Most of the catch is marketed alive, fresh boiled or as fresh or frozen lobster meat. The remainder is canned. The United States provides an excellent market with peaks of demand in the summer vacation season and at Christmas. Hitherto unexploited scallop beds, recently discovered on George's Bank off the mouth of the Gulf of Maine, are becoming an increasingly valuable resource. In 1959 nearly 5,000,000 lb. of scallop meat were produced, with a landed value of \$1,900,000.

The annual Atlantic herring catch is around 225,000,000 lb., about one-third of which is comprised of the small-sized herring used by New Brunswick's sardine canneries. Smoke houses and pickling plants produce a variety of herring products and the fish are also in steady demand for lobster bait. The bulk of the catch is taken in purse-seines or weirs. Mackerel and alewives are also utilized by pickling plants but both have provided dwindling catches over the past decade. Mackerel are netted in open water and alewives are trapped as they enter estuaries on their way to freshwater spawning beds.

The Atlantic salmon catch, after a long and fairly steady decline, increased in 1958 and again in 1959. This fish goes exclusively to fresh markets. Before the War, frozen Canadian Atlantic salmon was in demand in the United Kingdom. Since the War it has been barred from that market by import restrictions and there has been scant surplus for export in any case. In 1959, however, the import restrictions were lifted and, with improved catches, hopes rose for resumption of this trade.

Inland Fisheries.—In 1958 Canadian fish exports to the United States were valued at \$103,000,000. Fresh fish, round or filleted and usually frozen, accounted for \$87,000,000 of this amount. Included in the latter was \$21,000,000 worth of fish from inland lakes and streams. The bulk of the catch comes from the Great Lakes, Lake Winnipeg in Manitoba and Great Slave Lake in the Northwest Territories but six hundred smaller lakes also are fished commercially. Ontario is the heaviest producer, with Manitoba in second place and Saskatchewan in third but output of all western areas is increasing as improved transportation facilities enable fishermen in remote areas to get their catch to market. Great Slave Lake yields almost all the commercial catch of the Northwest Territories. It supports a gillnet fishery for whitefish and lake trout, with catch limits set by the Federal Government.

Whitefish and pickerel, in approximately equal proportions, together comprise about half the Canadian freshwater catch. Perch is next in both quantity and value. Sturgeon and lake trout are valuable additions and tullibee and pike are taken in considerable quantities. A wide variety make up the remaining 10 p.c. of the landings, ranging from the aristocratic goldeye to the lowly chub.

Conservation of the Fisheries.—The resources upon which the fisheries are based, in both Canadian waters and international waters within reach of Canadian fishing craft, require constant conservation and development. The federal Department of Fisheries is responsible for such conservation and development,* although it has delegated administrative rights to some of the provinces.

Fish populations are exposed to many threats, natural and man-made. Seafish, such as salmon, which come into fresh water to spawn, are particularly vulnerable. A natural rock slide or a man-made high dam may bar them from their spawning grounds if precautions are not taken. Fish are subject to natural disease or may be destroyed by the man-made poisons of industrial development, now expanding so rapidly in the Canadian west and north. A species may be badly affected by natural predators or by overfishing; increased mobility and efficiency of modern fishing fleets intensify the latter problem.

Because of their high value and great vulnerability, salmon stocks receive major consideration. Arrivals of spawning runs have been studied and can now be predicted with fair accuracy. Streams are cleared of obstructions before the fish arrive. An obstruction may be anything from a beaver dam to a mountain rock slide or a hydro-electric power plant. The beaver dam can be cleared away; the rock slide may be tunnelled or bypassed by an artificial fishway; the power plant may require a fish ladder constructed like a stairway of small locks to break one steep ascent into many smaller ones which the fish can readily negotiate. A small change in water level may be of life-and-death importance to fish in a stream. In a hot summer, fingerlings may be stranded in pools which are drying up. Sudden release of water from an upstream reservoir may drown the sandy shallows of a spawning ground or wash the sand out of it. Consequently, officials of the federal Department constantly review applications for water and foreshore rights, stream-bed leases and certain mining leases to determine whether they will be detrimental to local fish stocks. They also arrange with industrial plants for the maintenance of adequate flow and the screening of water intakes.

They co-operate, for instance, with the Fisheries Section of the Fraser River Board, studying flood control measures and effects of possible hydro-electric development. In Newfoundland they are making an important river system an attractive home for spawning salmon by removing obstructions, constructing and maintaining fishways and preparing sandy shallows for deposit of eggs. Adult salmon transferred to the new locale are adapting well to it and later generations hatched there will return naturally. In the same way, salmon runs to the Maritime Provinces are being rebuilt. Hatcheries collect eggs, rear the young and distribute them to desirable locations.

New Brunswick's valuable commercial oyster stocks and adjacent ones in Nova Scotia were almost wiped out a few years ago by disease (not harmful to humans). A resistant strain from Prince Edward Island is being successfully transplanted to replace the loss. Six thousand barrels of oysters have already been moved.

Waste from mining or chemical industries, sewage disposal and insecticide spray programs poison streams and kill thousands of fish. Such dangers must be detected and their ill effects neutralized. With radioactive fallout and the problem of disposal of radioactive wastes, this danger may soon extend to the open ocean.

Precautions are taken against predators. A bounty is paid on harbour seals, which prey on Atlantic salmon runs. The price of dogfish livers is subsidized on the Pacific Coast to reduce the numbers of this species on certain fishing grounds. Sea lampreys in the Great Lakes destroyed almost all the lake trout in most of the fishing areas before an eradication program could be organized, but it is now hoped that a poison specific to lampreys can bring them under control and make it possible to rehabilitate the trout.

* The functions and services of the Department of Fisheries are outlined at pp. 631-632, and those of the Fisheries Research Board at p. 634.

The most powerful enemy to fish, however, is modern fishing gear. Whenever vulnerable stocks are concerned, fishing may be limited as to time and place, kind of gear, size of net mesh, size of fish to be taken, etc. Intensity of fishing may be controlled by licence. Fishing areas are patrolled. Persons guilty of infractions of the regulations are prosecuted. Experts are currently looking for a way to reduce the waste of immature fish in the dragger fishery. Even the alewife is receiving special consideration. This fish is traditionally salted for the West Indies trade. Now it is also in demand for lobster bait and pet food so that fishing has been intensified. Relation of catch to stocks is being studied, especially since, like salmon, the fish are taken during spawning runs.

Culture and protection of available stocks are supplemented by constant exploration for new stocks. Large scallop beds recently found offshore now support a valuable fishery in the Maritime Provinces. Assurance of steady supplies was all that was needed to stabilize a strong market.

Canada also shares in international agreements to conserve certain fish stocks in extra-territorial waters,* co-operating with the United States to protect fish populations in the Great Lakes and regulate catches of Pacific halibut and pink and sockeye salmon to the mutual advantage of both countries; joining with the United States and Japan to preserve and perpetuate stocks in the North Pacific; and entering into a formal agreement among all nations fishing the banks of the North Atlantic to prevent over-fishing in that area.

Agricultural potential of the land masses of the globe has been measured. Food potential of the sea is only known to be enormous—complete assessment cannot be made.* The North Atlantic banks provide some of the world's best sea fishing. Canada is nearer to them than any other nation and so, as competition intensifies, will always have an advantage in real cost of operations. Canada also has a greater freshwater area than any other nation and these inland waters are more amenable to fish culture than the sea. They are increasingly exploited commercially as road-building programs open up the more remote lakes. They help Canada to hold her supply position on the world market and it seems certain that they will gradually become more important during the next decade.

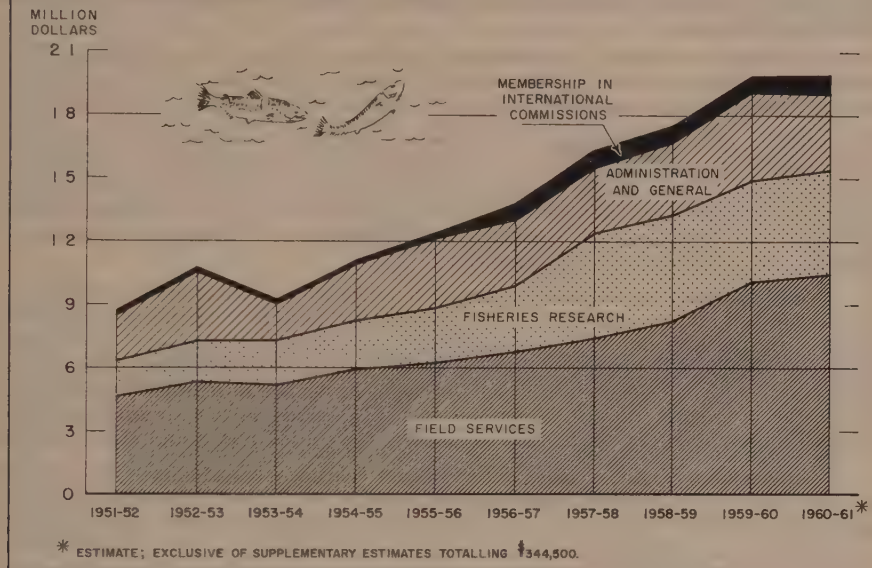
Section 2.—Governments and the Fisheries

The British North America Act gave the Federal Government full legislative jurisdiction for the coastal and the inland fisheries of Canada and under this Act laws are made for the protection, conservation and development of the fisheries throughout the country. However, the provinces have, by agreement, assumed administrative responsibilities in varying degree. Consequently, though all the regulations governing fishing are made by the Federal Government, the work of administering the fisheries (enforcing the different laws and regulations, inspecting fish products, issuing licences, etc.) is done without duplication of staff either by federal or by provincial officers, according to arrangement.

Specifically, all tidal or sea fisheries except those of the Province of Quebec are administered by the federal Department of Fisheries, and the freshwater or non-tidal fisheries with some exceptions are administered by the provincial departments. Quebec takes responsibility for all its fisheries including those in salt waters. Ontario, Manitoba, Saskatchewan and Alberta administer their freshwater species. In British Columbia, provincial government control extends to the freshwater forms and the Federal Government is responsible for marine and anadromous species. In Prince Edward Island, Nova Scotia, New Brunswick, Newfoundland and the Yukon and Northwest Territories, the Federal Government maintains complete control; administration of the fisheries of the National Park areas throughout Canada is the responsibility of the Canadian Wildlife Service, Department of Northern Affairs and National Resources.

* See also pp. 632-633.

FEDERAL GOVERNMENT EXPENDITURES ON FISHERIES SERVICES, YEARS ENDED MAR. 31, 1952-61



Subsection 1.—The Federal Government

The work of the Federal Government in the conservation, development and general regulation of the nation's coastal and freshwater fisheries is performed by three agencies under the Minister of Fisheries:—

- (1) The Department of Fisheries proper with headquarters at Ottawa, Ont., and area offices under Area Directors at Vancouver, B.C., Winnipeg, Man., Halifax, N.S., and St. John's, Nfld.
- (2) The Fisheries Research Board of Canada with headquarters at Ottawa and eight stations across Canada.
- (3) The Fisheries Prices Support Board with headquarters at Ottawa.

A brief outline of the functions of these agencies is given in this Subsection.

The Department of Fisheries.—The chief responsibilities of the Department of Fisheries throughout Canada are, in brief: to conserve and develop Canada's primary fishery resources; to encourage the development of the fishing industry in the national economy; to inspect fish products, establish standards of quality and promote the optimum utilization of the resource; and to develop a proper public understanding of the resource and the industry.

The larger part of the staff of the Department is stationed in the field and is composed mainly of protection and inspection officers. The protection officers, including those on the Department's 82 patrol and protection vessels, are concerned with the enforcement of the conservation regulations under the Fisheries Act and other Acts designed to ensure a continuing maximum yield of fish, and are also responsible for the inspection of fish products and processing plants under the Fish Inspection Act and relevant section of the Meat and Canned Foods Act.

A conservation program is carried out by the Conservation and Development Service of the Department. Protection officers enforce regulations pertaining to restricted areas, close seasons, limitations in location and types of gear, and also inspect spawning streams and keep them clear of obstructions. Biologists investigate such problems as pollution and water supply, and engineers construct fishways to enable fish to bypass obstructions of all kinds. Hatcheries are maintained to restock waters where the fisheries are under federal administration.

For the past few years a bounty has been paid for the killing of the parasite-carrying harbour seals along the Atlantic and Pacific Coasts at a rate of \$10 for adults and \$5 for young seals. Total payments for the year ended Mar. 31, 1960 amounted to \$31,200.

Inspection of fish and fish products to ensure a high standard of quality is carried out by the Inspection and Consumer Service, and fish inspection laboratories are maintained on the Atlantic and the Pacific Coasts and in Toronto and Winnipeg. A staff of home economists operates test kitchens in Ottawa, Toronto, Vancouver, Montreal, Halifax, Edmonton and Winnipeg, and conducts demonstrations and lectures on methods of preparing and cooking fish and fish products.

Through the medium of printed material, films, radio, television and exhibitions, the Information and Educational Service of the Department informs the public on the various aspects of the industry and the work of the fisheries service, with the object of developing a better understanding of the resource and those engaged in its exploitation. This Service works closely with the Conservation and Development Service in matters concerning the conservation of fisheries and with the Inspection and Consumer Service toward encouraging increased consumption of Canadian fish products in the United States and other markets.

The Economics Service engages in two related fields of responsibility: (1) to provide the government and the commercial fishing industry with current information, including statistical data, under the general heading of trade intelligence, and (2) to carry out studies and investigations in the primary fisheries and in the processing and distribution of fish products. In the first field, the Service works in close co-operation with the Dominion Bureau of Statistics and the Foreign Trade Division of the Department of Trade and Commerce; in the second, there is similar collaboration with the Fisheries Research Board. In both, a necessary contribution is made to the formulation of policy for fisheries management, industrial development and market services.

In addition to these regular services the Department assists the commercial fishing industry in several special ways. To promote efficient primary fishing operations and improve the marketing of fishery products, assistance is provided for the construction of dragners and longliners and for bait-freezing and storage facilities on the Atlantic Coast. The Fishermen's Indemnity Plan affords low-cost protection from losses of boats and lobster traps through storms and other causes. The Plan, in operation since 1953, meets a long-standing need on the part of small-scale individual fishermen. Vessels valued at from \$250 to \$10,000 may be insured with payment of a premium of 1 p.c. of the appraised value per annum. Up to Mar. 31, 1960, a total of 5,423 fishing vessels with an appraised value of \$16,347,840 had been insured under the Plan. In response to considerable demand for a similar type of protection against unusual losses of fishing gear and equipment other than vessels, a first step was taken by the introduction of regulations giving a measure of compensation to lobster fishermen suffering abnormal losses of lobster traps, provided that a small premium has been paid by the fisherman. The premium rate varies in accordance with conditions in the different fishing areas but has been kept low. The Department also provides financial assistance to educational institutions agreeing to carry out specialized educational work among fishermen.

International Fisheries Conservation.—Conservation of the resources of the high seas can be effected only with regulations, and for this purpose international treaties have had to be made. Canada's obligations under such treaties with the United States and other countries are administered by the Department of Fisheries.

Canada and the United States have led the world in joint fisheries conservation development. Major examples of this joint effort are the International Pacific Halibut Convention, concerned with the preservation of the halibut stocks of the north Pacific and the Bering Sea, and the International Pacific Salmon Fisheries Convention, concerned with the conservation and development of the sockeye and pink salmon of the Fraser River. Investigations carried out under the auspices of Commissions appointed under these conventions, subsequent regulation and limitation of catches, and the construction of salmon fishways appear to have been successful in arresting and reversing an earlier trend towards depletion of these fisheries. Another example of restoring a depleted marine resource by international agreement and action is that of the fur seals of the Pribilof Islands in the Bering Sea. Under a treaty signed in 1911, known as the (North Pacific) Sealing Convention, pelagic sealing was prohibited while the animals were migrating to and from the Pribilofs where most of them breed. This treaty had been signed by the United States, Canada, Russia and Japan, and was one of the earliest conventions on resources of the sea. In 1941 Japan abrogated the treaty and the following year Canada and the United States signed a Provisional Fur Seal Agreement under which Canada, in return for abstaining from pelagic sealing, received 20 p.c. of the annual catch, which was supervised by the United States. A conference to re-negotiate the original convention was begun in Washington in November 1955 and a new settlement was signed by the original four countries on Feb. 9, 1957.

In 1949 the Government of Canada became a signatory, along with nine other countries, to the International Northwest Atlantic Fisheries Convention which came into force in 1950. The Commission established under this Convention, with headquarters at Halifax, N.S., makes scientific investigations of the fishery resources of the northwest Atlantic. The Commission has no regulatory powers but can make recommendations to the respective governments regarding measures that may be necessary for maintaining the stocks of fish that support the international fisheries in the Convention area. Treaty signatories are: Canada, Denmark, Iceland, the United States, the United Kingdom, France, Italy, Norway, Portugal and the Federal Republic of Germany.

A step towards international action in regulating the high seas fisheries of the northern Pacific Ocean was achieved in December 1951 when Canada, the United States and Japan conferred at Tokyo. The resulting Convention was ratified by the three contracting governments and instruments of ratification were deposited at Tokyo in June 1953. The treaty is known as the International Convention for the High Seas Fisheries of the North Pacific Ocean and aims at providing the maximum sustained yield of the fishery resources of the northern Pacific non-territorial waters with each of the parties assuming obligations to encourage conservation measures. The Commission established under this Convention is studying the northern Pacific fisheries and will determine the application of the treaty principles and promote and co-ordinate the necessary scientific studies.

The seventh, and latest, international fisheries agreement to which Canada is a signatory is the Great Lakes Fisheries Convention, which provides for joint action by Canada and the United States in Great Lakes fishery research and in a program for the control of the predator lamprey in these waters. This Convention came into force in October 1955. (See also p. 629.)

Canada is a member of the International Whaling Commission and is obligated to collect biological data on whales caught by Canadian vessels. Whaling operations are conducted in some years off the coasts of Newfoundland and British Columbia.

The Fisheries Prices Support Board.—Under the Fisheries Prices Support Act passed in 1944, this Board was set up in July 1947 to recommend to the Government price-support measures when severe price declines occur. The Board functions under the direction of the Minister of Fisheries and consists of a chairman, who is a senior officer of the Department of Fisheries, and five members chosen from private and co-operative firms in the industry, representative of the various fish-producing regions of Canada.

The Board has authority to buy quality fishery products under prescribed conditions and to dispose of them by sale or otherwise, or to pay to producers the difference between a price prescribed by the Board and the average price the product actually commands. The Board has no power to control prices nor has it any jurisdiction over operations in the fishing industry or the fish trade. Money necessary for dealings in fishery products is available to the Board from the Consolidated Revenue Fund to a maximum amount of \$25,000,000 but only on recommendation of the federal Treasury Board and authorization of the Governor in Council.

The Board maintains a small staff for administrative activities. The work is closely integrated with that of the Department's Economics Service and, where possible, services required by the Board are carried out by Department personnel. The Board has carried out field surveys on market conditions and possibilities and on factors affecting the income of fishermen in the various producing areas. The financial position of fishermen is kept under continuous review and recommendations are made to the Government on the basis of the findings. Special investigations are made when serious problems arise in particular areas.

The Fisheries Research Board.*—The Fisheries Research Board of Canada was established in 1937 to succeed the Biological Board of Canada which in 1912 had succeeded the Board of Management of the Canadian Marine Biological Station established in 1898. The Board functions under the control of the Minister of Fisheries as an independent fisheries research body carrying out "investigations of practical and economic problems connected with marine and fresh water fisheries" (Fisheries Research Board Act) and, as such, provides the Department of Fisheries with services for research into problems encountered by the Department in its administration of the fisheries of Canada. The Board carries out biological research through five centres across Canada, oceanography at two and technological studies at five others. The Board consists of a full-time chairman appointed by the Governor in Council and 18 unpaid members appointed by the Minister of Fisheries; as stated in the Fisheries Research Board Act, "a majority of the members of the Board, not including the Chairman, shall be scientists, and the remaining members of the Board shall be representative of the Department and the fishing industry".

The biological work of the Board is designed primarily to provide a general scientific basis for the conservation and wise management of Canada's vast marine and freshwater fishery resources. Investigations include the life histories of the various species of commercial importance, their population dynamic, their diseases and enemies. Also investigated are positive cultural methods in areas where some control of the environment is possible; new fishing grounds are sought and experiments in improvement in fishing methods undertaken. The biological work on the Atlantic Coast is conducted out of stations at St. Andrews, N.B., and St. John's, Nfld.; Arctic work is directed from Montreal, Que.; work on freshwater fish is directed from a station at London, Ont.; and Pacific Coast work is directed from a station at Nanaimo, B.C.

Oceanography includes the study of the biological, chemical and physical aspects of the marine and freshwater environments of fish and other aquatic organisms of importance. These studies are necessary to understand the occurrence and distribution of the fish and are carried out by the Board's two oceanographic groups, one on each coast.

The technological studies are aimed at making the best use of Canada's fishery catches. Investigations are conducted towards improving methods of preserving and processing and in the utilization of fish wastes. In recent years considerable work has been done on mechanization to further develop higher efficiency in the industry. The technological work on the Atlantic Coast is carried out at stations in Halifax, N.S., and Grande Rivière, Que., and applied work for Newfoundland is under the supervision of a unit at St. John's, Nfld., and for inland areas under a unit at London, Ont. A station at Vancouver, B.C., undertakes Pacific Coast studies.

* Prepared by Dr. J. L. Kask, Chairman of the Fisheries Research Board of Canada, Ottawa.

Subsection 2.—The Provincial Governments*

An outline of the work undertaken by each of the provincial governments in connection with administration of commercial and game fisheries is given in the following paragraphs.

Newfoundland.—The provincial Department of Fisheries in conjunction with the Newfoundland Fisheries Development Authority, a Crown corporation established in 1953, is concerned mainly with improvement and development of fishing and production methods. It conducts experiments and demonstrations in longlining, Danish seining and otter trawling, in the construction of multi-purpose fishing craft, and in the exploration of potential fishing grounds.

Loans are made to processors for the establishment and expansion of fish processing plants and for deepsea druggers and also to fishermen for the construction and purchase of modern vessels capable of a greater variety of fishing operations and larger production. Fishermen receive further aid through bounty payments at the rate of \$160 per ton for newly constructed vessels under the Fishing Ships (Bounties) Act of 1955. The Fishing and Coastal Vessels Rebuilding and Repairs (Bounties) Act was passed in 1958 to enable the government to assist financially in maintaining and prolonging the life of the existing fleet, and in 1959 the Coasting Vessels (Bounties) Act was passed, designed to encourage the construction of new coastal vessels for service in Newfoundland waters by granting a maximum bounty payment of \$300 per ton for locally built ships not exceeding 400 gross tons.

Other services include the operation of fisheries training schools in navigation and engineering, advisory services to fishermen on gear and equipment, industrial research, plant construction, plant engineering and economics, assistance to fishermen's unions, weather and ice reports, and search and rescue. The Fisheries Salt Act passed in 1957 implements more rigid control over the use of fisheries salt.

The inland waters of Newfoundland, though they provide excellent sport fishing, are not commercially exploited. The lakes and ponds remain under the authority of the Natural Resources Branch of the provincial Department of Mines and Resources, but the rivers and streams—the resort of migratory fish such as salmon and sea trout—are under federal control. Matters of conservation and guardianship are therefore mainly or wholly the concern of the federal Department of Fisheries although, to the extent to which they affect the ponds and lakes, they are subject to provincial or joint action.

Prince Edward Island.—The sea and inland fisheries of Prince Edward Island are administered by the Federal Government. The provincial Department of Fisheries supplements federal activity, and is mainly concerned with development of the fisheries industry. The Department provides technical assistance and, in conjunction with the Fisheries Research Board of Canada and branches of the federal Department of Fisheries, engages in some experimental work.

Financial assistance is made available to fishermen through the Fishermen's Loan Board of Prince Edward Island, a body corporate operating under the provincial Department. The Fishermen's Loan Board operates under authority given by the Re-establishment Assistance Act and regulations thereunder, approved by the Lieutenant-Governor in Council, Jan. 7, 1949, with amendments. Loans are made to fishermen and companies for the purchase of boats, engines and other deck machinery at an interest rate of 5½ p.c. Since its reorganization in 1949, the Board has lent approximately \$1,500,000 for the modernization of the inshore and offshore fleets. Loans for the construction or expansion of processing plants are available through the Industrial Establishments Promotion Act under which loans may be made for facilities handling agricultural, horticultural or fisheries products.

* Prepared by the respective provincial departments responsible for fisheries administration.

Game fisheries are the responsibility of the Department of Industry and Natural Resources. The streams of the province, mostly spring-fed and fairly constant in flow, provide very favourable conditions for the reproduction of game fish, of which speckled trout is the most important variety. Investigations concerning the production of trout of a size attractive to anglers are being conducted by the Fisheries Research Board of Canada at sites provided by the provincial Department. Unfortunately many of the formerly fertile and highly productive ponds of the province have disappeared, and the provincial Department is actively concerned with damming and restoring these for the enjoyment of the public.

Nova Scotia.—Although both the marine and inland fisheries of Nova Scotia are completely under the control of the Federal Government, the Nova Scotia Government recognizes that several fields exist in which provincial initiative is necessary and appropriate, having regard for the importance of the fishery resources in terms of employment, industry, trade and recreation.

Provincial interests in the commercial fisheries are the concern of the Fisheries Division of the Department of Trade and Industry. The Fishermen's Loan Board and the Industrial Loan Board are administered within this Department; the first makes loans to fishermen for the purchase of new and improved boats and engines, and the second makes loans for the construction or improvement of fish processing plants. Technical advice is provided to applicants for loans and inspection and survey services are available to the Loan Boards. The engineering staff gives similar services to others in the fish industry who may not require financial assistance, and to dependent or collateral businesses such as the boat-building industry. A staff of instructors conduct training courses in the care and maintenance of marine engines, in basic navigation, and in the design, construction and maintenance of nets and other fishing gear. This program receives substantial assistance from the Vocational Training Branch of the federal Department of Labour. The actual on-course instruction is supplemented frequently by assistance to individuals or small groups coping with particular problems and by actual demonstration or loans of untried types or designs of fishing gear.

The Fisheries Division administers, in co-operation with the federal Departments of Fisheries and National Health and Welfare, the Nova Scotia Fisheries Act, which requires fish processors and wholesale buyers of fish from fishermen to obtain licences. The purpose of the Act is to improve the standards of sanitation, plant construction and operation in the local fish industry and trade. The Division also performs a variety of liaison services between individuals or local groups and the several departments of the provincial and federal governments to which any problem or proposal may have to be referred.

The provincial activities in connection with the inland fisheries are related almost wholly to salmon and trout. The Department of Lands and Forests is managing a project for the rearing in captivity of young salmon to the smolt stage, i.e., to the age when they are about ready to leave the rivers to grow to full maturity in salt water and are likely to have a higher survival rate than the younger fish usually distributed by hatcheries. Other work in these fields is carried on by the Nova Scotia Research Foundation, which has collaborated with the Fisheries Research Board of Canada in a program of research into the Atlantic salmon populations by providing some scientific personnel and by conducting certain investigations on the La Have and Margaree Rivers. Experiments in the fertilization of lakes have been undertaken to increase trout productivity and in partial poisoning to reduce the numbers of coarse fish competing with trout for the available food supply. Fundamental investigations into the fish-supporting capacities of lakes are currently active and include studies of the source and regeneration of such nutrients as phosphorous and nitrogen.

New Brunswick.—The commercial fisheries of New Brunswick, both tidal and inland, are under the jurisdiction of the federal Department of Fisheries; angling is also under the same jurisdiction but angling licences are being issued by the provincial Department of Lands and Mines. To supplement the activities of the federal Department of Fisheries,

the Provincial Government created, in 1946, a Fisheries Branch and a Fishermen's Loan Board within its Department of Industry and Development. Since its inception, the Fishermen's Loan Board has lent nearly \$5,000,000 to fishermen for the purchase of new fishing boats and modern equipment. Small loans are made available to inshore fishermen for the purchase of new lobster boats and engines, and larger amounts to offshore fishermen for the building and equipping of modern groundfish draggers and longliners. New Brunswick has an 85-dragger fleet which is one of the most efficient on the Atlantic Coast.

New designs of fishing vessels are being prepared every year by the Fisheries Branch and a certain pattern of standardization is followed to maintain building and maintenance costs at the lowest possible level. Recently, a fleet of twenty 48-foot longliners was built by the Board for fishermen of the Gulf of St. Lawrence area. Three newly designed combination longliner-gillnetters are being built on an experimental basis.

Practical training is made available by the Fisheries Branch to dragger operators and inshore fishermen during the winter season in various parts of the province. Instructions are given on navigation, care and maintenance of marine engines and electronic equipment, economics, marine insurance and proper handling of fish aboard fishing vessels. A permanent school of Fisheries was opened at Caraquet in the fall of 1959 where a two-year course (four months a year) is conducted for a small group of young fishermen. This school is operated by the local school board with the joint participation of the provincial Departments of Education and Industry and federal Departments of Labour and Fisheries.

In close co-operation with the Industrial Development Service of the federal Department of Fisheries, experimental projects, such as codfish gill-netting, Danish seining, purse seining for mackerel, mid-water trawling for sardines, mechanical clam digging, etc., are being undertaken by the provincial Fisheries Branch in an effort to introduce modern fishing methods and equipment.

To co-ordinate the efforts of the five Atlantic provinces and the Federal Government in the promotion of the East Coast fisheries, the federal Department of Fisheries, formed a Provincial-Federal Atlantic Fisheries Committee of which the Province of New Brunswick is a member.

Quebec.—The provincial Department of Game and Fisheries administers both the sea and the inland fisheries of Quebec. The Department has two divisions—the Division of Maritime Fisheries and the Division of Fish and Game, the latter being charged with the administration of the inland fisheries.

Sea Fisheries.—The Quebec Government gives much consideration to the administration of the sea fisheries of the province. For the benefit of producers and fishermen it operates a network of cold storage plants for the freezing and preservation of fish. The network comprises 59 plants together having a daily freezing capacity of 485 tons and a storage capacity of 22,000,000 lb. of fish. These plants also perform a valuable service to fishermen by providing them with frozen bait and ice. In addition, the Department owns and maintains 123 stations in small fishing ports where fish is kept under proper conditions while awaiting collecting trucks or boats, and also operates two artificial drying plants with a processing capacity of 6,000,000 lb. of fish annually.

The Department maintains a staff of fish wardens, technicians and technologists to administer fishery legislation and to assist in the application of new techniques for the expansion of the industry. The central administration is located at Quebec City with an office at Gaspé for the administration of cold storage plants. Fish inspection is carried out by federal inspectors who are vested with additional powers for local sale by the Provincial Government.

Educational work among the fishermen and producers is conducted by the Department to teach the latest methods of fish preparation and of obtaining high-quality products. The new Fisheries Training School at Grande Rivière gives to fishermen of all ages the opportunity of taking free theoretical and practical courses in fishery, and the Superior

School of Fisheries at Ste. Anne de la Pocatière conducts a four-year course for technologists. Encouragement is given to the co-operative associations of fishermen through the Social Economic Service of the latter institution. Under a maritime credit system, fishermen may obtain loans from credit unions for the purchase of boats and gear. The Department adheres to the federal-provincial agreement on the building of draggers and longliners and assumes the building costs on a capital refunding plan.

The fish trade is promoted through advertising campaigns in newspapers and magazines, cooking demonstrations, educational films and the free distribution of fish recipes and publicity leaflets as well as through exhibits at fairs.

Hydrographical research in the Gulf of St. Lawrence, studies on the location of new fishing grounds, and experiments on seafish biology are conducted by a Marine Biological Station at Grande Rivière and two substations on the North Shore and the Magdalen Islands. This research has brought into use new types of fishing vessels recommended to fishermen. The Department also operates a Limnological Laboratory at Quebec City for studying the biology of the freshwater fish of the St. Lawrence River and its tributaries. The Quebec Aquarium at Quebec City exhibits freshwater and saltwater fish in 30 large tanks.

Inland Fisheries.—The Division of Fish and Game exercises jurisdiction over the inland waters. Three hundred full-time wardens are employed and licences are required for sport fishing and hunting, the revenue from which is applied to the improvement of fishing and hunting conditions. Five hatcheries are maintained at strategic points throughout the province: St. Faustin, Lachine, Lac Lyster, Tadoussac and Gaspé. These establishments distribute speckled trout, Atlantic salmon and grey trout fry, maskinonge fingerlings and older fish.

The Department administers five parks and 13 reserves in all of which, except for Mount Orford Park, excellent fishing may be found. Gaspesian and Laurentide Parks are renowned for their trout fishing. Chibougamau Reserve and La Vérendrye Park, situated on the height of land, are eminently suited to canoe trips in search of pickerel, pike and grey or speckled trout. Five salmon streams, all under the jurisdiction of the Fish and Game Division, are open to anglers: the Romaine River, the St. Jean River, the Petite Cascapédia River, the Matane River and the Port Daniel River. The Department co-operates with sportsmen through a joint committee composed of departmental officials and the directors of the larger fish and game associations. The committee studies the maintenance of satisfactory fishing and hunting conditions and other problems arising out of the ever-changing conditions of modern life and their effect on the wildlife of the province.

The Biological Bureau of the province, located at the University of Montreal, operates two stations for practical work in the study of problems connected with marine life. One is located in Mont Tremblant Park and the other in Laurentide Park.

Ontario.—The fishery resources of Ontario are administered by the Fish and Wildlife Branch, Department of Lands and Forests. The Branch operates under the authority of the federal Fisheries Act, the Special Fishery Regulations for the Province of Ontario, the Ontario Game and Fisheries Act and the Regulations connected therewith.

Commercial Fishing.—The commercial fishing industry in Ontario provides employment for about 3,200 persons directly and for many more indirectly, and produces an annual yield of from 35,000,000 lb. to 45,000,000 lb. of fish. An all-time high catch of about 60,000,000 lb. was recorded in 1956. The industry, although widely scattered throughout the province, is centred chiefly on the Great Lakes, particularly Lake Erie which is noted for its blue and yellow pickerel, white bass, whitefish and perch. Other principal species of fish taken commercially are lake trout, herring or cisco, sturgeon, pike, catfish, bullheads, carp, suckers and smelt. Over one hundred smaller inland lakes are commercially fished, principally those in the northwestern portion of the province, and careful management of these lakes is essential to ensure continued production.

The types of fishing boats in use vary from small craft to 60-foot tugs, and types of gear vary from the most common gillnets, pound-nets and trap-nets, seines and baited hooks to small hand-operated seines and dip-nets. Fishing methods and equipment have been modernized rapidly during the past few years. Diesel-driven steel-hull tugs have replaced steam-driven wooden tugs. Such aids as depth-sounding devices, radar, ship-to-shore and ship-to-ship communications have been developed and a better knowledge of the fish and their movements has been established from biological research findings. Modern icing facilities and transportation methods are in use as well as new types of fishing gear.

Most Ontario fishermen are organized into various local associations. These associations are, in turn, represented by the Ontario Council of Commercial Fisheries and by the Lake Erie Fisheries Council, which perform important services to the industry. The Ontario Fishermen's Co-operative and its member groups are of interest also in the organization of the fishery in the province.

Angling.—The sports fishery in Ontario is rapidly becoming one of the major industries of the province. With an estimated freshwater area of some 68,490 sq. miles, the province is one of the most attractive fishing areas on the Continent. Excellent angling opportunities are available for such prized fish as lake, speckled, rainbow and brown trout, yellow pickerel, black bass, pike and maskinonge. It is difficult to measure the total value of the sports fishing industry to the province but the annual revenue from the sale of angling licences alone (mainly to non-residents, as residents require a licence for provincial parks only) is in the neighbourhood of \$2,500,000. The management of this valuable resource is administered by a well-trained field staff of conservation officers and biologists located in the 22 forestry districts of the province.

Provincial Hatcheries.—Ontario operates 20 hatcheries and rearing stations and excellent results have been produced in the culture and distribution of various species of game and commercial fish. The primary species reared in these operations include trout (lake, speckled, brown and rainbow), maskinonge, bass, whitefish and yellow pickerel. Four of the finest trout-rearing stations on the Continent are located in this province—at Dorion near Port Arthur, Sault Ste. Marie, Hills Lake near Englehart, and Chatsworth.

Fisheries Research.—Research in Ontario is carried on in the Great Lakes and in inland waters. At the South Bay Mouth Station on Manitoulin Island in Lake Huron, Wheatley on Lake Erie, and Glenora on the Bay of Quinte on Lake Ontario, fishery biological stations are operated for the investigation and study of the commercial and sports fisheries on the respective lakes. In Algonquin Park detailed studies concerning lake trout and smallmouth bass are in progress and management techniques are being tested against a background of creel census which has been continuous since 1936. Studies of speckled trout have recently been re-instituted after a five-year break in continuity.

A selective breeding experiment concerning the hybrid between lake trout and speckled trout is progressing favourably. The deep-swimming character of the lake trout and the character of maturity at early age of the speckled trout are those being selected for combination in the hybrid.

Co-operation by Ontario in the field of gear development is being extended through the Federal-Provincial Committee for Ontario Fisheries and in the field of sea lamprey control through the Great Lakes Fishery Commission.

Manitoba.—The freshwater fishery in Manitoba is assuming an increasingly important position in the economy of the province. Although, at the dictates of nature, the industry experiences periods of boom and recession, it is nevertheless constantly expanding. Production in 1959 of 31,931,600 lb. valued at \$6,253,524 provided full-time or part-time employment for 5,682 fishermen. In addition, at least 6,000 persons were engaged in subsidiary industries such as fish-processing, transportation, boat-building and other related industries.

The lakes and streams of the province produce 15 varieties of commercial fish, the most important species being whitefish, pickerel, sauger and northern pike. Some 2,500 commercial fishing boats are in operation, varying in size from lake freighters to small skiffs powered by outboard motors. The value of these boats together with nets and other equipment is estimated at \$2,878,000 and investment in processing plants and cold storage facilities at approximately \$3,000,000, which makes a total capital investment of at least \$5,000,000 in plant and equipment. On the whole, the fisheries are a tremendous economic asset to the province.

The Department of Mines and Natural Resources of Manitoba, in supervising operations and enforcing fishery regulations, operates a fleet of modern diesel patrol boats during the open-water seasons and uses bombardiers, snowmobiles and light trucks in winter. All patrol units are equipped with two-way radio communication instruments. Two spawn-gathering camps and four fish hatcheries are in operation in the province; two of the latter are pickerel hatcheries, one is engaged in the culture of whitefish eggs, and one operates on a year-round basis producing several varieties of trout. The fish culture program employs the latest scientific processes in the rearing and culture of the species mentioned and large plantings of sport and commercial varieties have been made. Data gathered through the years indicates that such culture operations are essential to the maintenance of well-stocked lakes and streams. Five species of sport fish are cultured at the Whiteshell Trout Hatchery—speckled, brown, rainbow and lake trout—and a new hybrid variety called “splake” is in production. This splendid species of sport fish, developed by crossing speckled and lake trout, has created great interest among anglers.*

A long-range scientific and biological program recently begun is designed to provide valuable factual information on such topics as lake limits and most favourable fishing seasons. Constant progress is also being made in the handling and processing of fish. Both the government and the industry are aware of the current market demands for high quality packaged products processed in modern plants under sanitary conditions and two new plants equipped to meet this demand have been constructed at Lynn Lake and Island Lake. The Department of Mines and Natural Resources, in co-operation with the Department of Health and Public Welfare, has inaugurated a plan to control health and sanitation as it relates to fishing stations and packing plants.

Saskatchewan.—Saskatchewan's fishery resource is based on approximately 32,000 sq. miles of water area and contributes much to the economic and recreational development of the province. The Fisheries Branch of the Department of Natural Resources, with head office at Prince Albert, is responsible for the administration of the fisheries, for the planning of policies and for the development of programs to ensure the proper management and utilization of the resource. The Branch has three main divisions—Fish Management (Commercial and Sport Fisheries Sections), Fish Research, and Fish Culture.

The commercial fishing harvest during the year ended Mar. 31, 1959 was the highest on record. Approximately 13,000,000 lb. of fish were taken from 148 lakes, the principal species being whitefish, lake trout, pickerel, northern pike and sturgeon. About 75 p.c. of this catch was taken in summer and the remainder during the winter season. The 11 processing plants operating in the province produced 2,250,000 lb. of filets; five of these plants have qualified for federal inspection in accordance with the federal Department of Fisheries voluntary inspection program for plants producing fresh and frozen fish products. The program for improving the quality of fish and raising the sanitation standards, actively carried out during the past few years, will enable Saskatchewan's fishing industry to benefit immediately from the federal inspection program.

During the year, 1,072 domestic fishing licences and 1,674 free Indian permits were issued. In addition, 84 fur farm fishing licences were issued to provide food for 45,300 mink; mink ranchers used approximately 5,250,000 lb. of coarse fish (cisco, burbot and mullet).

Sport fishing is one of the main recreational attractions in the province during the summer and angling through the ice in winter is becoming increasingly popular. The "roads to resources" and "forest access roads" programs have made several new water areas more accessible to the angler. In 1959, 104,889 angling licences were sold compared with 31,640 in 1949; in the same period the number of licences purchased by Saskatchewan residents increased from about 26,000 to 100,000.

The continued expansion of commercial and recreational fishing emphasizes the importance of the research program initiated in 1948, a program that has provided the basis for the development of fisheries management programs and policies. The main objective has been to encourage multi-utilization of the fishery, keeping in mind the interests of the various groups particularly concerned with the resource—commercial fishermen, mink ranchers and anglers. The main phases of the program are: (1) the undertaking of surveys to determine productivity of lakes; (2) the securing of information on the relationship of the fish species so that multi-purpose harvests may be developed on scientific bases; and (3) the undertaking of projects to assess factors, such as pollution, which may affect fish environment.

During the 1958-59 fiscal year, biological and fisheries investigation was made of 12 lakes, the life history of lake trout population at Lac la Ronge was studied, two small lakes were rehabilitated and pollution studies were made of the Qu'Appelle and Saskatchewan Rivers. The staff consists of five permanent biologists and one consultant, and usually 12 university students are employed during the summer on the surveys.

Operations at the new fish culture station commenced with the hatching of 43,000,000 pickerel fry in the spring, which were released in 61 lakes. At the Arctic grayling spawn camp on Black Lake at the east end of Lake Athabasca about 1,250,000 grayling fry were hatched. Some 182,500 eastern brook trout fingerlings were stocked in 26 streams, 130,000 rainbow trout were released in 13 water areas and 500,000 rainbow trout eggs were hatched for stocking in Thomson Lake, a 2,000-acre reservoir in the southern part of the province. In addition, some 16,000,000 whitefish eggs were incubated at the station for distribution to a number of saline lakes.

Alberta.—The Commercial Fisheries Branch and the Fish and Wildlife Branch of the Department of Lands and Forests administer commercial and game fishing respectively under authority of the Fisheries Act (Canada) and the Fishery Act (Alberta).

Regulations under the Fishery Act (Alberta), designed to improve the packing, handling, processing, storage and quality of commercial fish, have been well received and supported by the Alberta industry. In line with a policy for producing good-quality fish, lakes in which whitefish are infected with pike-tapeworm and do not meet the quality standard are commercially fished for animal food production only.

About 55 p.c. of the whitefish taken is exported to the United States. Exports have dropped considerably in recent years mainly because domestic markets have increased. Mink farmers of the province utilize almost the entire catch of tullibee.

The management of trout streams of the North and South Saskatchewan River systems is being continued on an alternate year, open and closed, basis. Surveys have shown that adequate harvests of trout are being realized by this type of management, while protection of breeding stocks, sufficient for natural reproduction, is afforded. Hatchery trout are being utilized almost exclusively for stocking lakes and beaver dams where natural reproduction is limited or non-existent. There is no closed season on trout with the exception of streams which require special regulations for management purposes. Minimum size limits have been removed on all game fish species in the province. Eradication of undesirable fish species by chemical treatment of lakes and subsequent restocking with trout is being carried out on a limited scale.

British Columbia.—A Fisheries Office, which was organized in 1901-02 and became very active in fish culture work, building and operating fish hatcheries and instituting scientific research into various fishery problems, was superseded in 1947 by the Department of Fisheries which in turn was superseded in 1957 by the Department of Recreation and

Conservation. Commercial fisheries are represented today as the Commercial Fisheries Branch of the Department of Recreation and Conservation. Broadly speaking the administrative and regulative jurisdiction over the fisheries of British Columbia rests with the federal authority. The ownership of the fisheries in the non-tidal waters is vested in the Crown in the right of the province, as are the shell fisheries such as oyster fishing and clam fishing in the tidal waters. The province administers these fisheries although the regulations covering them are made under federal Order in Council on the advice and recommendation of the province.

The Provincial Fisheries Act provides for the taxation of the fisheries and, under civil and property rights, for the regulation and control of the various fish processing plants under a system of licensing. Provision is also made for arbitration of disputes regarding fish prices that may arise between the fishermen and operators of the various licensed plants. The administration of the Act involves the collection of revenue and the supervision of plant operations.

Net fishing in the non-tidal waters of the province, including commercial fishing, is regulated and administered by the Commercial Fisheries Branch, Department of Recreation and Conservation, and authority for regulation of the game fisheries in non-tidal waters is vested in the Fish and Game Branch which operates a number of trout hatcheries and egg-taking stations for restocking purposes.

The shellfish laboratory at Ladysmith on Vancouver Island, formerly operated by the Department, was closed Dec. 31, 1958. The biological research into those species over which the province has control, principally oysters, clams and other forms of shellfish as well as marine plants, is now conducted by the Fisheries Research Board of Canada at the Pacific Biological Station, Nanaimo, B.C., under agreement with the federal and provincial authorities as of Jan. 1, 1959. The object of this research is to encourage the industry to produce better products more economically and to enable the Commercial Fisheries Branch to regulate the various species so that maximum exploitation may be obtained on a sustained-yield basis.

The Branch co-operates closely with the Fisheries Research Board of Canada.

Section 3.—Fishery Statistics

Subsection 1.—Primary Production

Although during 1958 poor weather and a scarcity of groundfish on the Atlantic Coast hampered the fishermen, the largest catch of sockeye salmon in fifty years and very heavy quantities of fall herring taken off the Pacific Coast plus rising prices paid to fishermen in all areas brought the gross income of fishermen to a record level of \$116,530,000 compared with a previous high of \$105,835,000 reached in 1956. Total landings of 2,016,326,000 lb. were 9.7 p.c. lower than those reported for 1956 but 1.4 p.c. higher than landings in 1957. The average annual landings for the five years 1953-57 was 2,012,976,000 lb. and the average landed value for the same period was \$95,769,800.

In British Columbia the 1958 catch of all species amounted to 650,589,000 lb. with a record landed value of \$51,352,000, which exceeded the 1957 catch of 490,187,000 lb. by 32.7 p.c. and the landed value of \$30,021,000 by 71.0 p.c. The greater increase in value than in landings was attributable to higher unit prices of halibut and troll-caught coho and spring salmon. These increases in prices, together with the exceptionally large catch of sockeye salmon which amounted to 74,011,000 lb. compared with only 15,719,000 lb. in 1957, and the heavy herring landings which reached 405,123,000 lb. compared with 295,376,000 lb. in 1957, made 1958 a banner year in the British Columbia fishery.

Although the scarcity of cod and poor fishing weather affected the 1958 Atlantic Coast fishery, lowering the quantity landed to 1,228,799,000 lb. or 8.7 p.c. below the previous year's figure, the value of the catch at \$51,153,000 was 0.8 p.c. higher than the 1957 value. Newfoundland, where cod is by far the largest and most valuable catch, was the hardest hit, the landings in that province dropping 17.3 p.c. from \$13,672,000 in 1957 to

\$11,312,000 in 1958. However, as a result of increased unit prices, the value of fish landed in the other Atlantic Provinces surpassed the 1957 level. Cod is the most abundant species on the Atlantic Coast and the weight of this fish taken far exceeds that of any other species. At the same time, average unit prices paid to fishermen for cod are much lower than for haddock, swordfish, halibut, lobsters, etc., so that this species makes up a much lower proportion of the total value than of the total quantity. The 1958 catch of cod amounted to 530,932,000 lb. valued at \$13,228,000, representing a 17.3-p.c. decrease in volume and a 12.2-p.c. decrease in value as compared with 1957.

Lobsters vied in importance with cod as a source of fishermen's income in 1958. The total Atlantic Coast catch was 42,950,000 lb. valued at \$15,375,000, a decrease of 3.4 p.c. in landings and of 6.0 p.c. in value from 1957. The greatest number of lobsters are taken from Nova Scotia waters. Landings in that province in 1958 amounted to 17,932,000 lb.; in New Brunswick, 9,663,000 lb.; in Prince Edward Island, 7,969,000 lb., in Newfoundland, 4,697,000 lb.; and in Quebec, 2,689,000 lb.

Haddock ranks third in economic importance to the fishermen of the Atlantic Coast. The value of the 1958 catch was \$4,092,000, slightly below the 1957 value of \$4,210,000. The flounders and soles including plaice, witch, winter flounders, etc., are also important species in this area, landings in 1958 amounting to 86,892,000 lb. with a value of \$2,746,000. Salmon on the Atlantic Coast is of relative unimportance as compared with other species of the area and with British Columbia salmon.

In 1958 the inland waters yielded a catch of 114,613,000 lb. of fish, 4.2 p.c. less than the 119,589,000 lb. landed in 1957, but the value of 1958 landings was \$14,024,000, 4.1 p.c. higher than the \$13,471,000 in 1957.

1.—Quantity and Value of Sea and Inland Fish Landed, by Province, 1954-58

NOTE.—Figures for the years 1918-53 are given in previous editions of the Year Book beginning with the 1947 edition.

Province or Territory	1954	1955	1956	1957	1958 ^a
QUANTITY					
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Newfoundland.....	607,413	577,954	621,560	575,825	464,024
Prince Edward Island.....	34,627	35,931	42,202	39,635	39,078
Nova Scotia.....	396,511	425,902	442,846	438,687	468,462
New Brunswick.....	213,294	167,438	194,283	192,299	161,073
Quebec.....	92,545	129,192	140,110	140,845	124,020
Ontario.....	47,680	45,634	59,710	51,109	47,175
Manitoba.....	28,445	34,936	30,397	31,571	31,929
Saskatchewan.....	10,524	10,152	9,441	11,065	12,600
Alberta.....	8,765	8,731	9,641	10,415	11,482
British Columbia.....	602,270	498,376	674,975 ^r	490,187	650,589
Northwest Territories.....	7,021	7,827	6,939	6,584	5,894
Totals.....	2,049,095	1,942,073	2,232,104^r	1,988,222	2,016,326
Sea Fish.....	1,932,908	1,823,114	2,107,508 ^r	1,868,633	1,901,713
Inland Fish.....	116,187	118,959	124,596	119,589	114,613
VALUE					
	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	14,704	14,161	14,969	13,672	11,312
Prince Edward Island.....	2,948	3,279	3,949	3,550	3,754
Nova Scotia.....	23,046	23,582	25,038	23,084	24,954
New Brunswick.....	7,310	6,763	8,146	7,014	7,499
Quebec.....	2,931	3,463	4,440	4,068	4,195
Ontario.....	7,013	6,783	7,927	7,047	7,271
Manitoba.....	3,088	3,477	2,947	3,279	3,540
Saskatchewan.....	741	763	784	939	1,091
Alberta.....	667	688	790	854	879
British Columbia.....	34,458	27,711	36,058	30,021	51,352
Northwest Territories.....	636	742	787	720	683
Totals.....	97,542	91,392	105,835	94,248	116,530
Sea Fish.....	84,819	78,267	91,944	80,777	102,506
Inland Fish.....	12,723	13,125	13,891	13,471	14,024

2.—Value of All Products of the Fisheries, by Province, 1954-58

NOTE.—Figures for the years 1917-53 are given in the corresponding table of previous Year Books beginning with the 1922-23 edition. Totals for five-year intervals from 1870 are given in the 1956 edition, p. 597.

Province or Territory	1954	1955	1956	1957	1958 ^a
	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	28,000 ^a	27,990	29,374	26,750	25,746
Prince Edward Island.....	3,922	3,841	5,246	4,410	5,449
Nova Scotia.....	44,079	47,093	49,363	45,779	50,812
New Brunswick.....	22,161	20,420	22,830	22,293	24,623
Quebec.....	5,002	6,675	7,860	7,580	7,827
Ontario.....	7,889	7,631	8,920	7,928	8,180
Manitoba.....	5,279	6,044	6,426	5,929	6,844
Saskatchewan.....	1,644	1,617	1,766	2,010	2,339
Alberta.....	1,141	1,144	1,306	1,451	1,450
British Columbia.....	69,351	60,032	68,016 ¹	63,650	97,016
Northwest Territories.....	2,040	1,529	1,483	1,298	1,235
Totals.....	190,505	184,169²	198,252²	188,018²	231,521
Sea Fish.....	171,935	165,532	177,695	168,769	210,911
Inland Fish.....	18,573	18,637	20,557	19,249	20,610

¹ Estimated.

² Figures differ from provincial totals because salted groundfish (except boneless) are based on sales rather than production; duplications for bloaters are also removed.

3.—Quantity and Value Landed and Marketed Value of the Chief Commercial Fish, by Selected Species, 1957 and 1958

Area and Species	Quantity Landed ¹		Value Landed ²		Marketed Value of Products ²	
	1957	1958 ^a	1957	1958 ^a	1957	1958 ^a
	'000 lb.	'000 lb.	\$'000	\$'000	\$'000	\$'000
Atlantic Coast						
Groundfish.....	936,206	874,591	26,148	24,868	56,499	63,051
Catfish.....	5,390	4,803	151	156	398	456
Cod.....	641,834	530,932	15,057	13,228	32,579	32,514
Flounder and sole.....	86,549	86,892	2,641	2,746	5,029	6,167
Haddock.....	131,638	103,366	4,210	4,092	10,034	10,054
Hake.....	21,122	22,763	412	412	464	661
Halibut.....	7,558	6,730	1,751	1,761	1,942	2,063
Pollock.....	36,849	50,320	708	882	1,623	2,484
Rosefish.....	46,361	61,371	1,032	1,488	2,702	3,693
Other.....	8,905	7,414	186	103	1,728	4,959
Pelagic and Estuarial.....	295,079	297,959	6,536	7,383	18,736	21,309
Alewives.....	11,585	9,429	169	140	333	458
Herring.....	222,314	233,044	2,515	2,826	6,541	6,848
Mackerel.....	19,690	16,147	724	737	1,644	1,709
Salmon.....	3,033	3,453	1,071	1,226	1,713	2,086
Sardines.....	—	—	—	—	5,667	5,901
Smelts.....	2,856	4,118	375	597	500	1,074
Swordfish.....	5,180	5,376	1,341	1,439	1,601	1,272
Other.....	30,421	26,392	341	418	737	1,961
Molluscs and Crustaceans.....	64,831	56,249	16,549	17,351	24,356	27,476
Clams—						
Quahaugs.....	1,072	933	38	39	53	39
Soft-shelled.....	3,836	3,573	235	189	590	413
Lobsters.....	44,438	42,950	14,501	15,375	21,145	24,933
Oysters.....	3,669	2,857	308	302	431	364
Scallops.....	3,329	3,332	1,285	1,269	1,704	1,553
Other.....	8,487	2,604	182	77	433	174
Other.....	...	...	1,522	1,651	5,528	2,059
Totals, Atlantic Coast.....	...	...	50,755	51,153	105,119	113,895

For footnotes, see end of table.

3.—Quantity and Value Landed and Marketed Value of the Chief Commercial Fish, by Selected Species, 1957 and 1958—concluded

Area and Species	Quantity Landed ¹		Value Landed ²		Marketed Value of Products ²	
	1957	1958 ^a	1957	1958 ^a	1957	1958 ^a
	'000 lb.	'000 lb.	\$'000	\$'000	\$'000	\$'000
Pacific Coast						
Groundfish	44,208	44,733	5,064	6,192	8,304	9,032
Cod.....	6,544	7,666	311	377	579	752
Halibut.....	22,542	23,708	3,673	4,902	5,618	6,690
Ling cod.....	4,750	4,296	390	382	552	564
Sablefish.....	1,504	576	227	74	392	181
Sole.....	7,979	7,654	428	424	912	780
Other.....	889	833	35	33	251	65
Pelagic and Estuarial	431,570	590,738	23,893	43,973	53,117	85,201
Herring.....	295,376	405,123	4,892	6,712	6,392	8,990
Salmon.....	131,897	181,318	18,885	37,129	44,903	75,800
Chum.....	27,238	38,103	2,426	3,749	6,137	8,124
Coho.....	20,610	22,355	3,626	6,383	8,124	9,601
Pink.....	66,968	33,749	6,374	3,158	15,934	9,665
Sockeye.....	15,719	74,011	4,427	20,778	9,295	41,366
Spring.....	11,199	12,849	3,005	4,018	4,647	6,700
Other.....	163	251	27	49	766	1,644
Tuna.....	38	18	6	3	1,766	207
Other.....	4,259	4,279	110	129	56	204
Molluscs and Crustaceans	13,518	14,468	921	1,089	1,851	1,932
Clams, butter, little neck, razor, etc.....	3,836	2,427	102	65	375	259
Crabs.....	3,030	4,209	298	384	759	801
Oysters.....	5,052	5,912	265	334	329	385
Shrimps and prawns.....	1,598	1,908	256	305	383	463
Other.....	2	12	--	1	5	24
Other.....	...	...	143	98	378	851
Totals, Pacific Coast.....	...	...	30,021	51,352	63,650	97,016
Inland						
Freshwater Fish	107,127	105,335	12,871	13,359	18,621	19,898
Bass.....	3,595	1,848	431	332	485	373
Catfish.....	1,411	1,543	205	232	229	259
Herring, lake (cisco).....	1,996	1,917	91	82	102	92
Perch.....	12,861	17,091	916	2,159	1,054	2,471
Pickarel (blue).....	6,398	834	1,151	216	1,295	243
Pickarel (yellow).....	19,215	15,475	3,603	3,387	4,621	4,874
Pike.....	7,598	7,231	322	353	824	853
Saugers.....	5,368	5,473	803	1,109	1,383	1,830
Sturgeon.....	455	627	342	384	411	446
Trout.....	4,607	4,966	627	675	1,080	1,182
Tullibee.....	7,593	10,609	378	505	556	732
Whitefish.....	24,444	24,023	3,611	3,496	5,967	5,812
Other.....	11,586	13,698	391	429	614	731
Other	12,462	9,278	601	665	628	712
Totals, Inland	119,589	114,613	13,472	14,024	19,249	20,610
Grand Totals⁴.....	...	...	94,248	116,529	188,018	231,521

¹ Excludes livers.² Includes value of livers and liver products.³ Included with "Herring".⁴ Slight discrepancy in totals compared with data in Table 1 results from rounding of individual figures.

4.—Capital Investment in Primary Sea and Inland Fisheries Operations, 1956-58

Kind of Equipment	1956		1957		1958 ^p	
	No.	\$'000	No.	\$'000	No.	\$'000
Sea Fisheries.....	...	109,111	...	116,193	...	91,858
Trawlers.....	33	6,603	34	6,003	33	4,153
Vessels—gasoline, diesel and sail.....	2,462	41,576	2,506	46,265	1,548	37,956
Boats—gasoline, diesel, sail and row.....	37,219	27,383	37,795	29,312	25,669	24,978
Packers, carrying boats and scows.....	757	1,461	843	1,671	471	679
Herring gillnets.....	44,375	1,327	50,264	1,278	33,353	908
Mackerel nets.....	17,751	610	19,822	615	22,440	674
Salmon nets, traps and seines.....	...	5,416	...	5,354	...	5,192
Smelt nets.....	10,323	425	12,695	464	15,193	615
Other nets, weirs and seines.....	...	5,692	...	5,933	...	3,129
Tubs of trawl, skates of gear, hand-lines.....	...	1,862	...	1,547	...	1,066
Lobster traps and pounds.....	2,373,587	9,368	2,389,766	9,281	1,936,607	7,020
Other gear.....	...	748	...	1,059	...	1,126
Premises—piers, wharves, freezers, ice-houses, small fish- and smoke-houses.....	...	6,640	...	7,411	...	4,362
Inland Fisheries.....	...	14,461	...	14,667	...	14,439¹
Carrying boats.....	95	451	127	531	101	520
Gasoline boats, skiffs, canoes.....	6,155	4,661	6,677	5,020	6,004	4,894
Gillnets.....	21,884 ²	4,966	22,163 ²	5,125	21,986 ²	4,624
Other nets, weirs and seines.....	...	1,316	...	1,231	...	1,156
Other gear.....	...	97	...	92	...	149
Premises—piers, wharves, freezers, ice-houses, small fish- and smoke-houses.....	...	2,437	...	2,176	...	2,592
Other equipment—fish tanks, bombardiers, trucks, snowmobiles, aircraft, etc.....	...	533	...	492	...	504
Grand Totals.....	...	123,572	...	130,860	...	106,297

¹ Excludes Alberta.² Thousand yards.

5.—Persons Employed in the Primary Fishing Industry, by Province, 1956-58

Province	Sea Fisheries			Inland Fisheries		
	1956	1957	1958 ^p	1956	1957	1958 ^p
	No.	No.	No.	No.	No.	No.
Newfoundland.....	14,956	16,469	18,364	—	—	—
Prince Edward Island.....	2,967	3,000	3,209	—	—	—
Nova Scotia.....	14,379	15,265	13,747	—	—	—
New Brunswick.....	9,399	7,815	6,060	386	352	160
Quebec.....	5,290	5,578	6,172	1,022	1,134	1,064
Ontario.....	—	—	—	3,135	3,066	3,224
Manitoba.....	—	—	—	5,389	5,395	5,682
Saskatchewan.....	—	—	—	997	1,500	1,600
Alberta.....	—	—	—	4,277	5,941	7,805
British Columbia.....	11,851	12,999	15,263	—	—	—
Northwest Territories.....	—	—	—	575	530	539
Totals	58,842	61,126	62,815	15,781	17,918	20,074

Subsection 2.—The Fish Processing Industry

The Census of Industry survey of the fish processing industry covers establishments engaged in the processing of fish at the secondary industrial level. Some fishermen also process the fish they land to a certain degree but their operations are not included nor are the minor amounts of processing done in the inland areas (Ontario, the Prairie Provinces, and the Northwest Territories). In 1958, products of fish processing establishments had a selling value of \$180,784,000; the East Coast fish plants contributed \$91,474,000 and those of British Columbia \$89,310,000.

6.—Summary Statistics of Seafood Processing Establishments, 1954-58

Item		1954	1955	1956	1957	1958
Establishments	No.	586	574	486¹	426¹	431¹
Newfoundland.....	"	29	34	43	36	35
Prince Edward Island.....	"	41	36	30	27	22
Nova Scotia.....	"	184	194	140	126	138
New Brunswick.....	"	166	167	147	123	126
Quebec.....	"	84	71	74	70	66
British Columbia.....	"	82	72	52	44	44
Employees	No.	14,202	14,626	14,329	13,285	13,193
Male.....	"	10,225	10,283	10,157	9,433	9,298
Female.....	"	3,977	4,343	4,172	3,852	3,895
Salaries and wages.....	\$'000	26,001	26,320	27,583	27,617	29,859
Fuel and electricity used.....	"	2,605	2,663	2,860	2,960	2,852
Materials used.....	"	95,633	101,921	104,575	97,969	122,633
Value of products.....	"	153,457	159,888	170,063 ²	150,562 ²	180,784 ²

¹ Excluding establishments whose main activity was the handling of fresh fish or other products, such establishments being included for previous years. ² Not strictly comparable with years prior to 1956; this figure applies to sales or shipments, while the value of production is given for previous years.

The most important products of the fish processing industry are canned salmon for British Columbia and frozen fillets of groundfish for the Atlantic Coast. Because of the record landings of salmon in 1958, the pack of the canned product was the highest since 1951; it increased 33 p.c. to 1,900,178 cases from 1,424,558 cases in 1957. The value of canned salmon at \$58,749,000 represented about 65 p.c. of the value of the British Columbia fishery products reported through the Census of Industry and was 66 p.c. higher than in the preceding year.

The frozen groundfish fillet production on the Atlantic Coast (packaged fillets and blocks) was 134,398,000 lb. in 1958 as against 128,206,000 lb. in 1957. This production has increased almost constantly from year to year in the past decade, the major factor in its more recent growth being the production of fish blocks. Frozen groundfish fillets produced on the Atlantic Coast were valued at \$31,449,000 in 1958, which made up about 30 p.c. of the total value for the fish processing industry in the area. Other products of importance include dried salted fish, pickled fish, canned sardines and lobster products.

7.—Atlantic Coast Production of Frozen Fillets and Fish Blocks, 1954-58

Area and Species	1954	1955	1956	1957	1958 ^p
	QUANTITY				
	'000 lb.	'000 lb.	'000 lb.	'000 lb.	'000 lb.
Maritimes	55,189	58,455	64,228	65,834	69,639
Cod.....	22,812	18,870	22,504	23,995	26,685
Haddock.....	16,487	19,080	20,227	18,567	16,593
Rosefish.....	7,091	6,771	9,340	7,670	8,147
Flatfish.....	7,143	11,863	10,051	12,515	12,067
Other.....	1,656	1,871	2,106	3,087	6,147
Quebec	1,824	4,099	7,368	10,243	10,784
Cod.....	1,645	2,952	6,099	8,645	8,779
Other.....	179	1,147	1,269	1,598	2,005
Newfoundland	53,326	58,843	61,895	52,129	53,975
Cod.....	31,362	33,457	31,312	30,275	32,129
Haddock.....	13,663	10,493	19,619	12,304	8,377
Rosefish.....	5,622	4,830	6,154	4,529	7,273
Flatfish.....	2,487	3,982	4,633	4,874	5,888
Other.....	192	81	177	147	308
Totals, Atlantic Coast	110,339	121,397	133,491	128,206	134,398
Cod.....	55,819	55,279	59,915	62,915	67,593
Haddock.....	30,150	35,716	39,921	30,917	24,987
Rosefish.....	12,713	11,833	16,086	13,198	16,862
Flatfish.....	9,630	16,531	15,245	17,932	18,418
Other.....	2,027	2,038	2,324	3,244	6,538

7.—Atlantic Coast Production of Frozen Fillets and Fish Blocks, 1954-58—concluded

Area and Species	1954	1955	1956	1957	1958 ^p
VALUE					
	\$'000	\$'000	\$'000	\$'000	\$'000
Maritimes	12,079	13,041	12,495	15,056	17,940
Cod.....	4,509	3,728	3,983	4,005	5,815
Haddock.....	3,915	4,324	3,759	4,727	5,116
Rosefish.....	1,380	1,198	1,574	1,661	1,894
Flatfish.....	1,870	3,405	2,662	3,256	3,834
Other.....	405	386	517	807	1,281
Quebec	217	765	1,150	1,667	2,000
Cod.....	174	496	901	1,350	1,586
Other.....	43	269	249	317	414
Newfoundland¹	10,852	11,439	11,881	10,052	11,509
Cod.....	6,009	6,229	5,646	5,471	6,393
Haddock.....	3,009	3,207	3,703	2,416	1,986
Rosefish.....	1,131	888	1,172	853	1,468
Flatfish.....	661	1,095	1,321	1,276	1,592
Other.....	42	20	39	36	72
Totals, Atlantic Coast	23,148	25,245	25,526	26,775	31,449
Cod.....	10,692	10,453	10,530	11,426	13,794
Haddock.....	6,824	7,561	7,477	7,151	7,106
Rosefish.....	2,511	2,119	2,834	2,669	3,622
Flatfish.....	2,531	4,094	4,121	4,685	5,560
Other.....	490	418	564	844	1,367

¹ Value for 1954 based on average export prices.

8.—Pacific Coast Production of Canned Salmon, 1954-58

Species	1954	1955	1956	1957	1958 ^p
QUANTITY (cases 48 lb.)					
Chum.....	580,575	124,769	204,071	239,641	230,636
Coho.....	128,080	185,722	212,115	193,058	131,527
Pink.....	335,551	831,253	363,933	751,609	451,802
Sockeye.....	681,768	249,365	320,096	228,452	1,074,304
Spring.....	14,080	18,097	13,713	10,480	10,704
Steelhead.....	3,733	1,589	1,253	1,318	1,205
Totals	1,743,787	1,410,795	1,115,181	1,424,558	1,900,178
VALUE					
	\$'000	\$'000	\$'000	\$'000	\$'000
Chum.....	8,155	1,966	3,925	4,490	3,792
Coho.....	2,996	5,250	6,783	5,497	3,997
Pink.....	5,989	15,740	7,761	15,763	9,437
Sockeye.....	20,682	9,304	12,990	9,265	41,240
Spring.....	237	337	361	242	252
Steelhead.....	77	39	32	38	31
Totals	38,436	32,636	31,852	35,295	58,749

The value of all fishery products processed or handled in Canada by processors, handlers or fishermen during 1958 reached \$231,521,000 for the sea and inland fisheries, 23 p.c. higher than the 1957 level of \$188,018,000. Atlantic Coast seafood products rose to \$113,895,000 from \$105,119,000, the British Columbia value of fishery products to \$97,016,000 from \$63,650,000, and the inland fish value to \$20,610,000 from \$19,249,000.

PART II.—FURS

Section 1.—The Fur Industry*

The beaver, symbol of industry and engineering skill, has well earned his place on the Canadian Coat of Arms. A few years after the discovery of the North American Continent, beaver fur became a major product in the economy of the New World. Europeans recognized the value of beaver pelts for warmth and in the production of felt; North-American Indians recognized the value of metal implements in their economy. Under the dual stimuli, intensive hunting developed which soon depleted the resources of the coastal areas and traders moved up the St. Lawrence River to find new sources of supply. With increasing demand for furs from European markets, competition became very keen and frequently led to violence between rival nations. Continued competition in later years between the Northwest Company and the Hudson's Bay Company resulted in a further westward surge of exploration culminating in Sir Alexander Mackenzie's epic journeys to the Arctic and Pacific Oceans. Unfortunately, exploration gave way to exploitation. By the beginning of the twentieth century many fur species were faced with extinction and their declining numbers brought hardship to the trader and even greater hardship to the native peoples who had become dependent on the white man for the necessities of life.

However, about that time, major changes began to take place in the techniques of fur production. Fur farming, particularly of fox and mink, made its appearance. Mink ranching, coinciding with the present popularity of short-haired furs, has provided a large part of the revenue of the fur industry in recent years. Of greater importance has been the realization that fur-bearing animals are a renewable resource and that proper management can provide much greater returns. Legislation has therefore been passed by provincial governments and by the Federal Government sharply limiting the trapping pressure in the areas under their respective control. The establishment of National Parks and Game Sanctuaries has provided areas where animals may increase unmolested and repopulate formerly depleted areas. Intensive forest fire control and forest management have assured a continuous habitat suited to mammal needs.

One of the major management techniques developed has been the introduction of registered trapping areas. Under this plan, each trapper has some opportunity of managing his own area to provide the greatest possible return while sustaining the yield. With the guidance of conservation education, the trapper is taking his place as an interested partner in the maintenance and expansion of the fur industry.

Unfortunately, the possible benefit from the increase in potential fur production brought about by fur farming and intelligent harvesting methods has been largely nullified by declining prices. The decline in popularity of fur as an article of clothing has been particularly noticeable since the end of the War and low prices have brought considerable hardship to those people, particularly northern residents, who depend on the fur crop as a major source of income. In the light of this situation, the Federal Government has arranged a series of international exhibitions designed to stimulate the market for Canadian fur. Research to determine actual numbers and status of fur-bearers is being carried on by the provincial governments in the provinces and by the Canadian Wildlife Service in the Yukon and Northwest Territories, with the objective of improving management practices and maintaining closer control of fur harvests.

The relative value of the fur industry in Canada's economy has, of course, lowered continuously throughout the years, but the dollar value of the annual fur production has remained fairly constant.

* Prepared by the Canadian Wildlife Service, Department of Northern Affairs and National Resources, Ottawa.

Section 2.—Provincial and Territorial Fur Resources and Management

Most of the fur resources of the provinces of Canada are under the administration of the respective provincial governments. Exceptions include those resources within the boundaries of the National Parks and the Indian reserves, and the fur resources of the Yukon Territory and the Northwest Territories, all of which are under the administration of the Federal Government. The Canadian Wildlife Service of the Department of Northern Affairs and National Resources (see pp. 30-31) is responsible for all Federal Government interests in wildlife resources except for those activities closely related to Indian affairs. The service co-operates with provincial governments and other agencies concerned and handles federal interests in relevant national and international problems.

Detailed descriptions of provincial and territorial fur resources and management activities are given in the 1957-58 Year Book, pp. 616-622.

Section 3.—Statistics of Fur Production*

Total Fur Production.—Early records of raw fur production were confined to the decennial censuses when account was taken of the number and value of pelts obtained by trappers. In 1920 the Dominion Bureau of Statistics commenced an annual survey of raw fur production. For a number of years the statistics were based on information supplied by the licensed fur trappers. More recently annual statements based on royalties, export tax, etc., have been made available by the provincial game departments (except Prince Edward Island), and these statements are used in the preparation of the statistics issued annually by the Bureau. Figures for Prince Edward Island are based on returns supplied to the Dominion Bureau of Statistics by fur dealers in that province.

1.—Pelts of Fur-Bearing Animals Produced and Percentage Sold from Fur Farms, Years Ended June 30, 1940-59

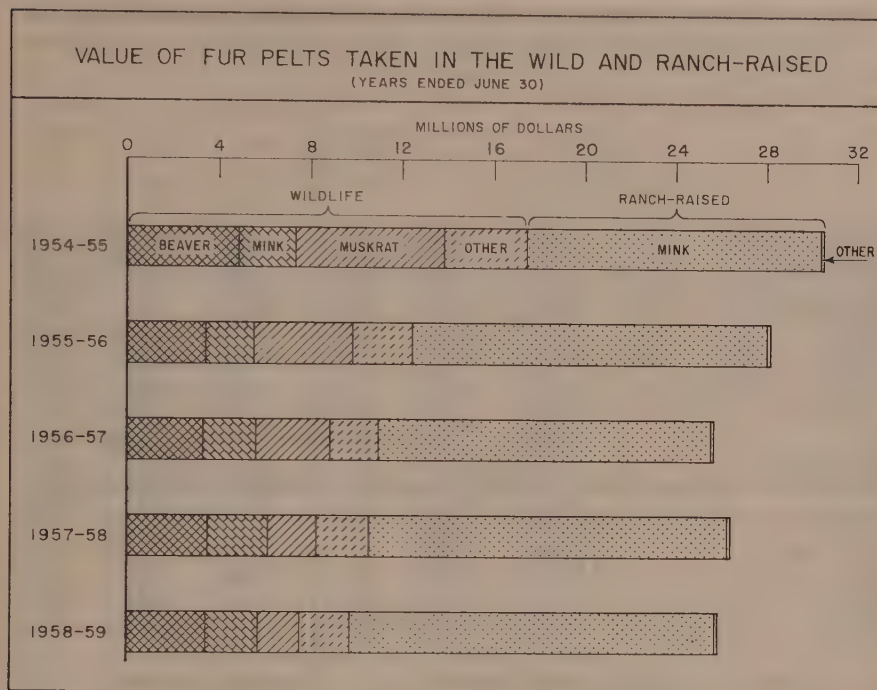
Year Ended June 30—	Pelts		Percentage of Value Sold from Fur Farms ¹	Year Ended June 30—	Pelts		Percentage of Value Sold from Fur Farms ¹
	Number	Value			Number	Value	
		\$				\$	
1940.....	9,620,695	16,668,348	31	1950.....	7,377,491	23,184,033	34
1941.....	7,257,337	21,123,161	26	1951.....	7,479,272	31,134,400	36
1942.....	19,561,024	24,859,869	19	1952 ²	7,931,742	24,215,061	42
1943.....	7,418,971	28,505,033	24	1953.....	7,568,865	23,349,680	43
1944.....	6,324,240	33,147,392	28	1954.....	6,274,727	19,287,522	49
1945.....	6,994,686	31,001,456	31	1955.....	9,670,796	30,509,515	43
1946.....	7,593,416	43,870,541	30	1956.....	7,727,264	28,051,746	56
1947.....	7,486,914	26,349,997	37	1957.....	6,919,724	25,592,130	57
1948.....	7,952,146	32,232,992	37	1958.....	6,440,319	26,335,109	60
1949.....	9,902,790	22,899,882	33	1959.....	5,370,580	25,801,395	62

¹ Approximate.

² Wildlife pelts for Newfoundland included from 1952.

Ontario led the provinces in value of fur production, accounting for 27 p.c. of the total in the 1958-59 season. Manitoba followed with 19 p.c., British Columbia with 14 p.c., Alberta 12 p.c., Saskatchewan 10 p.c., Quebec 9 p.c., the Atlantic Provinces 5 p.c. and the Yukon and Northwest Territories combined, with 3 p.c.

* Revised in the Agriculture Division, Dominion Bureau of Statistics.



2.—Pelts of Fur-Bearing Animals Produced, by Province, Years Ended June 30, 1958 and 1959

Province or Territory	1958			1959		
	Pelts	Value	Percentage of Total Value	Pelts	Value	Percentage of Total Value
	No.	\$		No.	\$	
Newfoundland.....	46,008	473,573	1.8	54,154	414,482	1.6
Prince Edward Island.....	5,143	65,519	0.2	4,461	62,498	0.2
Nova Scotia.....	64,478	438,865	1.7	66,131	521,379	2.0
New Brunswick.....	43,074	310,341	1.2	36,138	218,346	0.8
Quebec.....	330,882	1,909,353	7.3	343,658	2,290,163	8.9
Ontario.....	1,034,856	6,711,505	25.4	945,794	7,078,603	27.4
Manitoba.....	1,379,097	5,263,515	19.4	799,317	4,805,355	18.6
Saskatchewan.....	1,269,953	3,253,059	12.4	981,227	2,571,492	10.0
Alberta.....	1,396,937	3,352,482	12.7	1,343,581	3,209,948	12.4
British Columbia.....	502,196	3,702,799	14.1	456,392	3,753,404	14.5
Yukon Territory.....	110,512	118,607	0.5	103,604	67,571	0.3
Northwest Territories.....	257,183	735,491	2.8	236,123	808,154	3.1
Canada.....	6,440,319	26,335,109	100.0	5,370,580	25,801,395	100.0

The total number of pelts taken during 1958-59 was about 1,000,000 lower than in the previous year so that, despite generally higher average values per pelt, there was a drop of approximately \$500,000 in the total value of pelt production. Increased average values were shown for standard mink, which advanced from \$15.01 to \$16.49, white fox which rose from \$15.26 to \$19.97 and muskrat which was \$0.85 in 1958-59 compared with \$0.71 in 1957-58. On the other hand, beaver decreased from \$10.45 to \$10.20, marten from \$6.29 to \$6.08, mutation mink from \$17.01 to \$16.09, and otter from \$23.63 to \$23.05.

3.—Pelts of Fur-Bearing Animals Taken, by Kind, Years Ended June 30, 1958 and 1959

Kind	1958			1959		
	Pelts	Total Value	Average Value	Pelts	Total Value	Average Value
	No.	\$	\$	No.	\$	\$
Badger.....	663	949	1.43	348	1,002	2.88
Bear, white.....	558	34,580	61.97	413	28,550	68.64
Bear, unspecified.....	775	2,424	3.13	493	3,276	6.65
Beaver.....	341,674	3,572,054	10.45	328,584	3,353,031	10.20
Coyote or prairie wolf.....	3,899	8,269	2.12	2,533	7,813	3.08
Ermine (weasel).....	278,681	303,039	1.09	255,139	246,982	0.97
Fisher.....	5,718	97,668	17.08	4,850	84,038	17.33
Fox, blue.....	280	1,339	4.78	213	1,687	7.92
Fox, cross and red.....	11,479	12,882	1.12	15,578	27,796	1.78
Fox, silver.....	272	795	2.93	266	1,546	5.81
Fox, white.....	31,890	486,659	15.26	26,539	529,886	19.97
Fox, not specified.....	66	66	1.00	24	24	1.00
Lynx.....	9,506	85,499	8.99	14,165	198,350	14.00
Marten.....	16,566	104,132	6.29	18,047	109,788	6.08
Mink, standard.....	318,754	4,783,074	15.01	270,054	4,453,357	16.49
Mink, mutation.....	797,534	13,562,249	17.01	859,182	13,826,366	16.09
Muskrat.....	2,931,671	2,084,773	0.71	2,171,739	1,846,277	0.85
Otter.....	16,238	383,719	23.63	15,120	348,477	23.05
Rabbit.....	105,102	41,527	0.40	96,720	50,858	0.53
Raccoon.....	31,278	43,532	1.39	14,081	26,698	1.90
Skunk.....	5,455	4,569	0.84	1,744	1,422	0.82
Squirrel.....	1,523,518	626,493	0.41	1,262,006	499,238	0.40
Wildcat.....	564	622	1.10	778	2,915	3.75
Wolf.....	810	4,235	5.23	1,112	18,230	16.39
Wolverine.....	632	9,852	15.59	453	7,761	17.13
Other.....	6,736	80,108	...	10,399	126,227	...
Totals.....	6,440,319	26,335,109	...	5,370,580	25,891,395	...

Fur Farm Production.—Fur-bearing animals were first raised in Canada on farms in Prince Edward Island about 1887 and in Quebec in 1898; today fur farming is carried on in all the provinces. Foxes were the first fur-bearers to be raised in captivity on a commercial scale and for a time were of prime importance in the fur farming industry but recently very few foxes have been raised on farms. In 1958 mink accounted for 92 p.c. of the total fur-bearing animals on farms and chinchilla for 7 p.c. Small numbers of raccoon, marten, fisher, fitch, nutria and others are also reared.

There was a slow and steady increase in the number of fur farms until 1920 when 587 were reported, followed by a period of more rapid growth from 1920 to 1938 when the number reached 10,454 with a production value of \$6,500,000. In 1939, when the London and other European markets were lost to the fur industry, prices declined and many fur farms went out of production. Though prices rose considerably after the Second World War, operating costs increased and the number of fur farms, particularly those conducted in conjunction with other farming operations, continued to decrease. By 1958 only 2,572 farms reported but the value of production was \$16,094,000. The decrease in number of farms from 1957 amounted to 165, but the number of animals on such farms increased from 465,333 to 500,844 and the number of pelts taken increased from 4,891 to 9,160. Fox pelts taken continued their downward trend but there were 50,000 more mink pelts sold in 1958 than in 1957. Chinchilla also showed a considerable advance with an increase from 4,701 to 8,394.

Ontario is by far the major ranch-fur producer among the provinces and showed the greatest increase in value of production from 1957 to 1958. British Columbia and Manitoba followed in second and third places and these three provinces together produced 70 p.c. of the total value in the later year.

4.—Fur Farms and Value of Pelts Produced Thereon, by Province, 1957 and 1958

Province	Fur Farms at Year End		Value of Pelts Produced on Fur Farms	
	1957	1958	1957	1958
	No.	No.	\$	\$
Newfoundland.....	30	38	338,872	362,327
Prince Edward Island.....	23	23	64,532	61,913
Nova Scotia.....	95	97	327,117	390,739
New Brunswick.....	71	60	184,873	84,699
Quebec.....	357	328	738,805	951,358
Ontario.....	675	696	3,998,076	4,633,400
Manitoba.....	315	306	3,493,399	3,309,816
Saskatchewan.....	155	162	1,113,351	954,819
Alberta.....	299	329	1,856,684	2,012,725
British Columbia.....	528	533	3,309,554	3,331,710
Totals.....	2,548	2,572	15,426,335¹	16,093,794¹

¹Includes some pelts not valued by province.

5.—Number of Farms Reporting Fur-Bearing Animals, by Kind, as at Dec. 31, 1957 and 1958

Kind	1957		1958	
	Farms	Animals	Farms	Animals
	No.	No.	No.	No.
Fox.....	103	1,595	94	1,544
Mink.....	1,752	428,819	1,724	459,976
Chinchilla.....	677	32,626	711	35,801
Nutria.....	63	2,079	101	3,279
Other.....	37	214	38	244

6.—Number and Value of Pelts Produced on Fur Farms, by Kind, 1957 and 1958

Kind	1957		1958	
	Pelts	Value	Pelts	Value
	No.	\$	No.	\$
Fox.....	1,874	15,097	1,248	13,455
Blue.....	89	660	40	623
Platinum.....	797	5,967	493	5,870
Silver.....	982	8,444	706	6,920
Unspecified.....	6	26	9	42
Mink.....	936,283	15,346,004	982,783	15,968,133
Standard.....	144,741	2,144,317	123,601	2,141,767
Grey.....	113,154	1,542,604	116,702	1,390,543
Dark blue.....	72,900	1,361,082	85,763	1,527,303
Light blue.....	192,152	3,431,117	242,765	3,788,955
Brown.....	333,991	5,143,520	280,899	4,803,929
Beige.....	41,017	698,263	59,862	1,000,183
White.....	38,328	1,025,101	73,191	1,315,453
Chinchilla.....	4,701	65,054	8,394	113,063
Nutria.....	163	..	749	..
Other.....	27	180	17	..
Totals.....	4,891	65,234	9,160	113,063

Section 4.—Marketing of Furs

Montreal, Que., is the leading Canadian fur mart although auction sales are also held at Vancouver, B.C., Edmonton, Alta., Regina, Sask., and Winnipeg, Man. The Saskatchewan Government maintains a Fur Marketing Service at Regina to assist producers in that province.

Grading.—The grading of furs to secure uniformity was introduced in 1939 by the federal Department of Agriculture so that furs may be purchased by grade without the necessity of buyers from other countries personally examining the pelts. Grading offers many advantages to the producer as well as to the trade in general. It educates the rancher as to the proper value of his pelts and creates an incentive to improve the quality of the product; it furnishes guidance in the planning of future matings, aids in raising the standard of quality of the entire crop of pelts and helps in advancing the level of prices for high-quality pelts.

Exports and Imports.—Before World War II, Canada marketed fur pelts mainly in the United Kingdom but that market was practically dormant during the war years and the fur trade was carried on chiefly with the United States. A revival of trade with the United Kingdom took place after the War but 80 p.c. of Canadian fur exports still go to the United States.

The Canadian fur trade, both export and import, is mostly in undressed furs, the value of dressed and manufactured furs going out of or coming into Canada being a comparatively small proportion of the total. Canadian fur exports consist largely of those produced in greatest abundance, mink being the most valuable followed by beaver, muskrat and squirrel. Furs such as Persian lamb, mink, certain types of muskrat, raccoon, sheep and lamb and Kolinsky make up the major portion of the imports.

Exports and imports of all furs to and from the United States, the United Kingdom and all countries are given for the years 1957 and 1958 in Table 7.

7.—Exports and Imports of Furs, by Kind, 1957 and 1958

Kind of Fur	1957			1958		
	United Kingdom	United States	All Countries	United Kingdom	United States	All Countries
	EXPORTS					
	\$	\$	\$	\$	\$	\$
Undressed—						
Beaver.....	964,293	1,930,237	3,431,534	1,009,545	2,185,193	3,575,517
Ermine.....	195,124	108,406	302,046	154,323	89,567	243,890
Fisher.....	65,964	30,052	112,068	60,628	54,392	132,860
Fox, all types.....	69,905	863,900	742,728	27,569	939,696	973,373
Lynx.....	11,177	100,097	111,358	27,055	122,019	158,815
Marten.....	27,013	65,543	93,358	33,550	125,896	159,546
Mink.....	1,258,689	16,976,813	18,730,720	990,435	14,484,035	15,843,276
Muskrat.....	1,095,943	317,570	1,487,992	961,227	181,433	1,167,920
Otter.....	13,141	11,270	35,789	1,275	32,490	33,765
Rabbit.....	—	83,520	83,520	—	47,426	47,426
Raccoon.....	111	10,469	16,749	335	12,447	14,900
Seal.....	—	—	—	—	3,880	3,880
Skunk.....	2,389	595	2,984	6,193	2,954	9,147
Squirrel.....	541,521	19,068	562,698	632,755	470	633,225
Wiesel.....	35,156	42,146	77,302	22,808	36,520	59,328
Wolf.....	4,122	5,808	13,798	6,152	9,718	15,870
Other.....	26,400	94,173	139,326	47,857	177,783	248,863
Dressed—						
Fox.....	—	—	—	—	400	400
Other.....	49,810	444,364	1,465,305	239,456	305,106	1,129,097
Manufactured.....	2,591	493,337	570,458	15,393	475,909	537,918
Totals.....	4,363,354	21,395,368	27,979,733	4,236,556	19,287,834	24,989,916

7.—Exports and Imports of Furs, by Kind, 1957 and 1958—concluded

Kind of Fur	1957			1958		
	United Kingdom	United States	All Countries	United Kingdom	United States	All Countries
IMPORTS						
	\$	\$	\$	\$	\$	\$
Undressed—						
China and Jap mink.....	—	15,072	50,505	6,634	2,473	21,315
Fox.....	143,615	56,600	327,554	185,755	66,396	374,438
Kolinsky.....	106,327	5,318	389,413	105,375	8,409	572,262
Mink.....	162,752	4,248,652	4,659,586	254,848	5,238,810	5,808,010
Muskrat.....	11,024	2,759,768	2,840,797	15,190	1,582,729	1,637,408
Opossum.....	338	8,404	8,742	—	—	—
Persian lamb.....	2,178,180	5,590,743	8,780,980	3,822,033	4,603,642	9,484,754
Rabbit.....	2,017	61,697	173,882	—	62,941	136,869
Raccoon.....	—	647,892	647,892	—	—	—
Sheep and lamb.....	1,733	358,729	427,295	—	—	—
Squirrel.....	51,463	83,680	118,194	36,650	51,363	102,001
Other.....	272,724	705,927	2,438,145	230,190	726,292	1,749,378
Dressed—						
Rabbit.....	6,887	8,617	77,769	—	8,023	52,595
Sheep skins.....	2,396	175,926	178,578	3,117	96,446	100,571
Hatters furs.....	43,952	488,295	993,203	159,419	250,054	881,494
Other.....	182,382	2,598,729	2,877,881	371,672	2,259,294	3,000,278
Manufactured.....	29,582	672,138	720,617	36,331	555,676	621,516
Totals.....	3,195,372	18,486,187	25,711,033	5,227,214	15,512,553	24,542,889

Section 5.—The Fur Processing Industry*

The rather general term 'fur processing' includes the fur dressing and dyeing industry and the fur goods industry. The former is concerned with the dressing or dyeing of pelts on a custom basis and the latter is a manufacturing industry that makes up fur goods such as coats, scarves and gloves.

In 1958 the number of skins treated was 8,305,294 of which muskrat comprised 46 p.c., Persian and other types of lamb 14 p.c., mink 17 p.c., squirrel 7 p.c. and rabbit 4 p.c.

* Prepared in the Industry and Merchandising Division, Dominion Bureau of Statistics.

8.—Principal Statistics of the Fur Dressing Industry, 1954-58

Item	1954	1955	1956	1957	1958
Establishments..... No.	17	18	16	16	14
Employees on Salaries—					
Male..... No.	84	92	97	102	75
Female..... "	19	24	19	18	15
Employees on Wages—					
Male..... No.	859	876	777	782	680
Female..... "	180	170	159	157	138
Salaries paid..... \$	437,131	538,703	600,687	748,838	485,254
Wages paid..... \$	2,562,980	2,756,638	2,655,259	2,636,590	2,439,445
Cost of materials used (dyes, chemicals, etc.) \$	963,538	1,121,805	1,057,850	1,248,961	895,585
Pelts treated..... No.	9,279,897	9,762,062	9,119,334	8,960,044	8,305,294
Amount received for treatment of furs..... \$	5,634,991	6,498,292	6,241,696	6,299,336	5,508,408

The major output of the fur goods industry is ladies' fur coats; in 1958 the number was 196,685 valued at \$44,860,443. Principal statistics of the industry for 1954-58 are given in Table 9.

9.—Principal Statistics of the Fur Goods Industry, 1954-58

Item	1954	1955	1956	1957	1958
Establishments..... No.	581	558	522	540	493
Employees on Salaries—					
Male..... No.	1,083	1,015	995	1,007	891
Female..... "	282	257	243	226	227
Employees on Wages—					
Male..... No.	2,435	2,369	2,199	2,214	1,980
Female..... "	1,489	1,378	1,214	1,289	1,228
Salaries paid..... \$	4,531,941	4,470,610	4,490,164	4,727,107	4,858,051
Wages paid..... \$	9,816,442	9,652,509	9,675,793	10,307,339	10,074,811
Cost of materials used..... \$	36,058,592	38,389,138	39,044,908	38,988,557	37,667,750
Value of factory shipments..... \$	58,464,790	60,349,381	61,126,085	62,187,649	61,124,191

CHAPTER XIV.—MANUFACTURES

CONSPECTUS

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NOTE.—The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

This Chapter deals with manufacturing in Canada in three Parts. Part I reviews the manufacturing situation showing particularly the changing pattern of growth resulting from the recession which began in the autumn of 1957 and lasted until about November of 1958. Part II provides general statistical analyses including manufacturing statistics from 1917; detailed treatment of 1957 production under various groupings and individual industries; and principal factors in manufacturing production such as capital expenditures and size of establishment. Part III deals with the provincial and local distribution of manufacturing production.

PART I.—REVIEW OF MANUFACTURING

Canada is no longer on the fringes of industrialization but ranks among the world's most important manufacturing countries. The rate of expansion throughout the years has been phenomenal but in the past generation alone Canada has changed from a country producing and exporting mainly primary products to one that is increasingly producing and exporting manufactured goods. Today, manufactures account for about 26 p.c. of the value of all goods and services produced and employ a like percentage of the total labour force.

Basic historical developments, such as the opening of the West and the magnitude of requirements of all kinds for World Wars I and II, have been followed by recent events of far-reaching significance—the discovery of the major oil pool on the prairies in 1947, the discovery of large-scale deposits of iron and the successful search for uranium have given new dimensions to Canadian thinking and business planning. These factors explain

the records of capital expenditures year by year in the postwar period. Yet it is not only rate of growth that is significant. There have been other periods when Canada's population has grown more rapidly and, in many respects, the rate of industrial expansion in the late 1920's was relatively as great as in the postwar years. But the real significance of the latter period is that never before has there been an advance on such a broad industrial front.

Noteworthy also is the changing emphasis of Canadian manufacturing activity. By 1949 the period of postwar conversion had passed and Canada had entered a new phase of economic expansion which derived its dynamic from the discovery of new resources and the application of new processes. Thus, even the sharp recession in the United States in the year 1949 failed to have significant effects in Canada. The influence of the Korean war and the consequent rearmament program gave an added impetus to the expansion of Canadian industry and to the development of Canadian basic resources. Capital expenditures that contributed most to the defence of Canada were given priority. Additional capacity was created to meet requirements of the specialized defence program—aircraft, electronic equipment, ships and guns—many items of which had never before been produced in Canada. Measures such as steel control, credit regulations and deferred depreciation had the desired effect—a shift gradually took place toward the further expansion of basic industrial capacity and away from investment in consumer goods and services.

The stability of current levels of manufacturing is indicated by the fact that such activity is the result of business assessments of resources and market potentialities. Millions of dollars are being invested in oil because the prairies can produce oil as economically as other great fields on the North American Continent. Petrochemical plants are being erected because the raw materials are readily at hand. The establishment of great smelting enterprises has been based on the coincidence of abundant and cheap hydro-power and access to ocean transportation, both of which are essential to low-cost production. The exploitation of the Ungava iron deposits rests on the belief that the steel industry of the North American Continent will need the high-grade ores involved in order to meet continually increasing demands. No country is in a more favourable position than Canada to supply uranium for the production of atomic energy.

Of strategic importance, and probably of even greater long-term significance to the Canadian economy, has been the growing world-wide shortage of raw materials—a shortage born of rising levels of employment and income and accentuated by the course of international events, especially since 1950. These demands have shown few signs of abating and have led to substantial increases in Canadian primary manufacturing capacity, particularly for light metals, nickel, chemical fertilizers and cheaper grades of paper.

In recent years the demands stemming from population growth and a rising standard of living have been noticeable at all levels. In food processing, a steady up-grading in the quality of foods sold on the domestic market has been even more important than the increased production required for a growing population. The two together have almost doubled the dollar sales of processed foods in this country since 1945. At the intermediate level, other important changes have taken place. Many of Canada's new chemical plants, for example, have been built with the domestic consumer in mind. Frequently using petroleum or natural gas as a source of raw material, they have gone a long way toward making Canada independent of imports in such categories as vanillin, nylon and rayon intermediates, and plastics for packaging and similar uses.

The tremendous development that has taken place in Canada during the decade preceding 1957 is strikingly illustrated by the increase of 70.3 p.c. in the physical volume of manufactured products between 1946 and 1956 as compared with an increase of only 31 p.c. in population. Part of this increase in production resulted from increased demands from abroad for Canadian manufactured goods, part to the demands imposed on Canadian industry as a result of the expansion in the economy during the same period, and part to an increase in the standard of living of the Canadian people. The advance of 91.9 p.c. in the output of durable goods, consisting mainly of building materials, transportation

equipment, and machinery and equipment of all kinds, reveals the extent of the contribution made by Canadian industry to the tremendous expansion in the productive capacity of the country. Non-durable goods during the same period increased by 53.8 p.c. With only one exception, all groups in both these sectors recorded market advances in volume output from 1946 to 1956, the exception being leather products with a decline of 6.8 p.c. In the durable goods sector, the most striking advance was made by the electrical apparatus and supplies group with an increase of 182.6 p.c. This was followed by non-metallic mineral products with 166.0 p.c., transportation equipment with 95.9 p.c., iron and steel products 79.8 p.c., non-ferrous metal products 62.6 p.c., and wood products 59.3 p.c. The greatest advance among the non-durable groups during the 1946-56 period was made by products of petroleum and coal with 190.8 p.c., followed by chemicals and allied products with 100.9 p.c., miscellaneous industries with 83.3 p.c., printing, publishing and allied industries 78.5 p.c., rubber goods 72.1 p.c., paper products 70.1 p.c., beverages 68.4 p.c., tobacco and tobacco products 61.0 p.c., textiles 32.2 p.c., foods 27.6 p.c. and clothing 23.4 p.c.

In 1957, despite a downturn in production which began in the autumn of the year, the manufacturing industries established new highs in number of employees, salaries and wages paid and selling value of factory shipments. Shipments were the highest on record and exceeded by 2.5 p.c. the high mark attained the previous year. The employment picture was not so impressive. Although there was an increase of 0.4 p.c. in persons employed in 1957 as compared with 1956, the number still was only 31,610 higher than the record employed in 1953. Salaries and wages paid and value added by manufacture exceeded the previous highs of 1956 by substantial margins. On the other hand, the physical output of manufactured products declined by 1.5 p.c. despite the small increase in number of employees; a drop of about 2 p.c. in the average number of hours worked per week in 1957 contributed to this result. The decrease in the volume of production, which contrasted with the increase in selling value of factory shipments, was more or less accounted for by an increase in the wholesale prices of partly and fully manufactured goods. The output of non-durable goods recorded a minor increase of 1.2 p.c. but the production of durable goods was down by 4.3 p.c., resulting in a net decline of 1.5 p.c. for manufacturing as a whole. The total index for manufacturing in 1957 stood at 142.9; for non-durable goods it was 139.7 and for durable goods 146.7.

The high level at which the manufacturing industries of Canada operated during 1957 was the result of two main factors. First was the continued high spending on capital goods, such as construction and machinery and equipment of all kinds, which rose 8 p.c. This high expenditure had the effect of stimulating certain durable goods industries to a marked degree. The volume of output of the hydraulic cement industry advanced 20.6 p.c., bridge-building and structural steel was 15.8 p.c. higher, and heavy electrical machinery as well as industrial machinery and machine tools recorded minor gains. The output of the primary iron and steel industry dropped 5.9 p.c.; production of pig iron at 3,718,350 tons was 150,147 tons higher but steel ingots and castings at 5,068,149 tons were 233,053 tons lower. The second factor was the impact on the consumer goods industries of the increase of about 543,000 in population and of the continued rise in labour income.

Lower export demand for Canadian manufactured products adversely affected manufacturing operations in 1957. The sharp decline in the exports of planks and boards, shingles, veneer and plywood which occurred in 1956 continued throughout 1957. Exports of wood pulp, newsprint, whisky, wheat flour, aluminum and products, copper and products, zinc, automobiles and parts, fertilizers, and aircraft were all lower but there were increases in exports of farm implements and machinery, nickel, artificial crude abrasives, non-farm machinery and synthetic plastics and their manufactures.

The minor recession that started late in 1957 continued for over a year to the beginning of November 1958. In comparing the two years it is found that the selling value of factory shipments in 1958 was only fractionally lower than the shipments in 1957, a year of record attainments. However, the decline in the physical output at 2.7 p.c. was more substantial and compared with a drop of 0.1 p.c. in value of shipments. The difference was accounted for by an increase in the wholesale prices of partly and fully manufactured goods. The

decline in production was accompanied by a drop of 5.0 p.c. in the number of persons employed. This, when compared with a drop of only 2.7 p.c. in the physical volume of production, follows the trend of recent years of the same volume of goods being produced by fewer employees. Because of the continuing increase in weekly and hourly earnings in manufacturing, a trend common to all other sectors of the economy, salaries and wages paid were down only 0.2 p.c. compared with 1957.

As already noted, the physical volume of production in 1958 declined 2.7 p.c., as compared with 1957 and 4.1 p.c. compared with the record level of 1956. Most of the effects of the downturn were felt by the producers of durable goods, whose volume of output dropped 5.5 p.c. Production of non-durable or consumer goods was all but maintained at the same high level as in the previous year. In the durable goods sector only two groups reported increases in volume—non-metallic mineral products increased by 7.6 p.c. and wood products by 3.0 p.c. The increased volume of these two groups reflected the continued high spending for construction, despite the general slackening in economic activity. The hydraulic cement industry, which is a component of the non-metallic mineral products group, increased 2 p.c. in volume, output rising from 6,049,098 tons in 1957 to 6,153,421 tons in 1958. The woods products group was also stimulated by the strengthened demand in other countries for its products; exports of planks and boards in 1958 amounted to 3,922,953,000 feet compared with 3,653,497,000 feet in 1957, red cedar shingles 1,814,711 compared with 1,718,203, and veneer and plywood 561,767,000 sq. feet compared with 490,750,000 sq. feet. Of the groups reporting lowered output, transportation equipment was the hardest hit; railway rolling-stock dropped 22 p.c., shipbuilding 17 p.c., motor vehicles 14 p.c., motor vehicle parts 10 p.c. and aircraft 5 p.c. The primary iron and steel industry suffered a loss of 9.5 p.c.; the production of pig iron at 3,059,579 tons was 658,771 tons lower and steel ingots and castings at 4,359,486 tons were 708,663 tons lower. The output of machinery was also severely curtailed; the machinery industry of the iron and steel group reported a drop of 22 p.c. in volume, while the heavy electrical machinery of the electrical apparatus and supplies group showed a more moderate decline of 11 p.c.

In the non-durable goods sector the trend in physical output in 1958 was mixed. Seven of the 12 groups in this sector reported declines, the greatest drop in volume of production being that of 7.2 p.c. in the rubber and rubber products group. Textiles came a close second with a loss of 6.9 p.c. and other declines ranged from 3.0 p.c. for products of petroleum and coal to 0.5 p.c. for paper and paper products. For the groups reporting higher volume of output, the increases ranged from 7.6 p.c. for tobacco and tobacco products to 1.0 p.c. for beverages. The gains made by these five groups almost equalled the losses of the other seven, so that the net result for the non-durable group as a whole was a loss of only 0.1 p.c. in volume.

Ontario continues to maintain its predominance among the provinces in manufacturing production, and in 1958 accounted for 49.0 p.c. of the total value of factory shipments. Quebec with 30.5 p.c. of the total retained second place followed by British Columbia with 8.1 p.c. Ontario's share in 1958 was slightly smaller than in 1957 while Quebec and British Columbia reported minor increases. The impact of the minor downturn in production in 1957-58 was not the same for all provinces. The outstanding feature was an increase of 2.3 p.c. in the number of employees reported by Saskatchewan when all other provinces reported declines. This no doubt resulted from the fact that Saskatchewan, being mainly a producer of consumer goods, was able to increase its manufacturing operations to meet the requirements of expanded population. British Columbia, with a drop of 5.1 p.c. in employees, experienced a second setback in manufacturing employment which had been expanding uninterrupted for a number of years prior to 1957. The greatest decline in employment, however, was reported by Newfoundland which had a drop of 8.3 p.c. Other declines ranged from 8.0 p.c. in Nova Scotia to 1.1 p.c. in New Brunswick. For Canada as a whole the decline in employment was 5.1 p.c.

The variations in volume of production experienced by the industrial groups for different periods during the past twenty years are given in the following table.

1.—Percentage Variation in Volume of Production, by Industrial Group, for Certain Periods 1946-58

Group	Volume Index (1949=100)		Percentage Variations			
	1957	1958	1957 compared with 1958	1946 compared with 1951	1951 compared with 1956	1946 compared with 1956
Non-durable Goods—						
Foods.....	133.2	139.0	+ 4.4	+ 3.9	+22.8	+27.6
Beverages.....	143.2	144.7	+ 1.0	+29.2	+30.3	+68.4
Tobacco and tobacco products.....	161.0	173.2	+ 7.6	+ 4.9	+53.6	+61.0
Rubber and rubber products.....	147.8	137.2	- 7.2	+39.6	+23.3	+72.1
Leather products.....	115.6	114.4	- 1.0	-27.1	+27.9	- 6.8
Textiles.....	117.6	109.5	- 6.9	+27.5	+ 3.7	+32.2
Clothing, including knitting mills.....	116.8	114.4	- 2.1	+ 6.2	+16.2	+23.4
Paper products.....	135.5	134.8	- 0.5	+45.1	+17.3	+70.1
Printing, publishing and allied industries.....	138.2	134.4	- 2.7	+38.7	+30.6	+78.5
Products of petroleum and coal.....	223.5	216.8	- 3.0	+72.9	+68.2	+190.8
Chemicals and allied products.....	183.4	186.5	+ 1.7	+37.9	+45.7	+100.9
Miscellaneous industries.....	153.3	160.0	+ 4.4	+48.4	+23.5	+83.3
Durable Goods—						
Wood products.....	127.3	131.1	+ 3.0	+32.3	+20.5	+59.3
Iron and steel products.....	139.6	126.4	- 9.5	+44.8	+24.2	+79.8
Transportation equipment.....	151.2	130.8	-13.5	+62.9	+20.3	+95.9
Non-ferrous metal products.....	127.6	125.8	- 1.4	+39.5	+16.6	+62.6
Electrical apparatus and supplies.....	183.6	175.5	- 4.6	+78.3	+58.5	+182.6
Non-metallic mineral products.....	191.3	205.9	+ 7.6	+66.4	+59.8	+166.0
All Manufactures.....	142.9	139.1	- 2.7	+35.0	+26.2	+70.3
Non-durable Goods.....	139.7	139.5	- 0.1	+23.4	+24.6	+53.8
Durable Goods.....	146.7	138.6	- 5.5	+50.1	+27.9	+91.9

PART II.—STATISTICS OF MANUFACTURING

Section 1.—Growth of Manufacturing

It is impossible to give absolutely comparable statistics of manufacturing over a long period of years. From 1870 to 1915 statistics were collected only in connection with decennial or quinquennial censuses and there was inevitably some variation in the information collected. The annual Census of Manufactures was instituted in 1917 and, though numerous changes have since been made in the information collected and in the treatment of the data, an effort has been made to carry all major revisions back to 1917, so that the figures for the period since then are on a reasonably comparable basis.

The Bureau of Statistics in 1952 changed its policy with regard to the collection of statistics on the production of manufactured goods. Firms in several industries where year-end inventory changes were known to be insignificant were requested to report value of shipments f.o.b. plant instead of gross value of products. Under the "value of products" concept, establishments were asked to report the factory selling value of the products made whether sold or not, the unsold portion being assigned the average selling value of similar articles sold during the year. Under the "selling value of shipments" concept, establishments are required to report their sales during the year regardless of when the products were made, an item usually readily available from the firms' records. The changeover was made in order to ease the burden of reporting for the majority of manufacturing establishments. The value of shipments concept for small and medium sized establishments is more realistic and more readily obtainable from their accounting records, whereas the value of products made, for firms not recording such information, must be derived from special calculations.

1.—Summary Statistics of Manufactures, 1917-58

NOTE.—Statistics of manufacturing from 1870 have been published but between that year and 1917 figures are not on a comparable basis to the series given below. Statistics for significant years appear in the 1943-44 Year Book, p. 363. Figures of the non-ferrous metal smelting industries were first included with manufactures in 1925.

Year	Estab- lish- ments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture ¹	Gross Value of Products ²
	No.	No.	\$	\$	\$	\$
1917.....	21,845	606,523	497,801,844	1,539,678,811	1,281,131,980	2,820,810,791
1918.....	21,777	602,179	567,991,171	1,827,631,548	1,399,794,849	3,227,426,397
1919.....	22,083	594,066	601,715,668	1,779,056,765	1,442,400,638	3,221,467,403
1920.....	22,532	598,893	717,493,876	2,085,271,649	1,621,273,348	3,706,544,997
1921.....	20,848	438,555	497,399,761	1,365,292,885	1,123,694,263	2,488,987,148
1922.....	21,016	456,256	489,397,230	1,272,651,585	1,103,266,106	2,375,917,691
1923.....	21,080	506,203	549,529,631	1,456,595,367	1,206,332,107	2,662,927,474
1924.....	20,709	487,610	534,467,675	1,422,573,946	1,075,458,459	2,570,561,931
1925 ³	20,981	522,924	569,944,442	1,571,788,252	1,167,936,726	2,816,864,957
1926 ³	21,301	559,161	625,682,242	1,712,519,991	1,305,168,549	3,100,604,638
1927 ³	21,501	595,052	662,705,332	1,741,128,711	1,427,649,292	3,257,214,876
1928 ³	21,973	631,429	721,471,634	1,894,027,188	1,597,887,676	3,582,345,302
1929 ³	22,216	666,531	777,291,217	2,029,670,813	1,755,386,937	3,883,446,116
1930 ³	22,618	614,696	697,555,378	1,664,787,763	1,522,737,125	3,280,236,603
1931.....	23,083	528,640	587,566,990	1,221,911,982	1,252,017,248	2,555,126,448
1932.....	23,102	468,833	473,601,716	954,381,097	955,960,724	1,980,417,543
1933.....	23,780	468,658	436,247,824	967,788,928	919,671,181	1,954,075,785
1934.....	24,209	519,812	503,851,055	1,229,513,621	1,087,301,742	2,393,692,729
1935.....	24,034	556,664	559,467,777	1,419,146,217	1,153,485,104	2,653,911,209
1936.....	24,202	594,359	612,071,434	1,624,213,996	1,289,592,672	3,002,403,814
1937.....	24,834	660,451	721,727,037	2,006,926,787	1,508,924,867	3,625,459,500
1938.....	25,200	642,016	705,668,589	1,807,478,028	1,428,286,778	3,337,681,366
1939.....	24,805	658,114	737,811,153	1,836,159,375	1,531,051,901	3,474,783,528
1940.....	25,513	762,244	920,872,865	2,449,721,903	1,942,471,238	4,529,173,316
1941.....	26,293	961,178	1,264,862,643	3,296,547,019	2,605,119,788	6,076,308,124
1942.....	27,862	1,152,091	1,682,804,842	4,037,102,725	3,309,973,758	7,553,794,972
1943.....	27,652	1,241,068	1,987,292,384	4,690,493,083	3,816,413,541	8,732,860,999
1944.....	28,483	1,222,882	2,029,621,370	4,832,333,356	4,015,776,010	9,073,692,519
1945.....	29,050	1,119,372	1,845,773,449	4,473,668,847	3,564,315,899	8,250,368,866
1946.....	31,249	1,058,156	1,740,687,254	4,358,234,766	3,467,004,980	8,035,692,471
1947.....	32,734	1,131,750	2,085,925,966	5,534,280,019	4,292,055,802	10,081,026,580
1948.....	33,420	1,155,721	2,409,368,190	6,632,881,628	4,938,786,981	11,875,169,685
1949.....	35,792	1,171,207	2,591,890,657	6,843,231,064	5,330,566,434	12,479,593,300
1950 ⁴	35,942	1,183,297	2,771,267,435	7,538,534,532	5,942,058,229	13,817,526,381
1951.....	37,021	1,258,375	3,276,280,917	9,074,526,353	6,940,946,783	16,392,187,132
1952.....	37,929	1,288,382	3,637,620,160	9,146,172,494	7,443,533,199	16,982,687,035
1953.....	38,107	1,327,451	3,957,018,348	9,380,558,682	7,993,069,351	17,785,416,854
1954.....	38,028	1,267,966	3,896,687,691	9,241,857,554	7,902,124,137	17,554,527,504
1955.....	38,182	1,298,461	4,142,409,534	10,338,202,165	7,653,450,496	19,513,933,811
1956.....	37,428	1,353,020	4,570,692,190	11,721,536,889	9,605,424,579	21,636,748,986
1957.....	37,875	1,359,061	4,819,627,999	11,900,751,703	9,822,084,726	22,183,594,311
1958.....	36,742	1,289,602	4,802,496,260	11,821,566,537	9,792,505,931	22,163,186,308

¹ For 1924-51, inclusive, the value added by manufacture is computed by subtracting the cost of fuel, electricity and materials from the gross value of products; for 1952 and 1953 the deduction is made from value of factory shipments and for 1954 and subsequent years from the calculated value of production. Figures prior to 1924 are not comparable because statistics for cost of electricity are not available.

² In 1952 gross value of products was replaced by selling value of factory shipments; see text immediately preceding this table.

³ A change in the method of computing the number of employees in the years 1925 to 1930, inclusive, increased the number somewhat over that which the method otherwise used would have given. In 1931, however, the method in force prior to 1925 was re-adopted.

⁴ Newfoundland is included from 1949 but figures for the fish processing industry for 1949 and 1950 are not available for that province and are not included.

Provincial distribution of manufactures is shown for certain years from 1917 to 1957 in Table 2.

2.—Summary Statistics of Manufactures, by Province, Certain Years 1917-57

Province and Year	Estab- lish- ments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture ¹	Gross Value of Products ²
	No.	No.	£	\$	\$	\$
Newfoundland—						
1949 ³	793	6,934	15,486,336	31,228,173	32,918,776	67,264,282
1953	939	10,575	26,604,908	44,972,021	57,784,697	106,524,603
1955	785	10,361	28,604,468	49,914,856	60,586,922	115,579,036
1956	783	10,502	30,462,735	55,451,956	62,607,709	123,691,344
1957	916	10,473	32,783,715	53,995,122	56,543,792	117,713,795
Prince Edward Island—						
1917	411	1,556	663,251	3,087,621	1,750,135	4,837,756
1920	370	1,287	855,210	4,164,223	2,135,857	6,300,080
1929 ⁴	263	2,074	727,286	2,862,725	1,466,446	4,408,608
1933	249	991	529,684	1,590,834	1,126,826	2,775,787
1939	222	1,088	617,945	2,239,117	1,243,979	3,543,681
1944	241	1,786	1,694,763	6,993,510	3,570,835	10,713,644
1946	246	1,755	1,651,469	7,582,046	3,469,435	11,200,310
1949	251	1,747	2,133,555	13,537,144	4,338,320	18,123,200
1953	216	1,809	3,095,845	16,963,798	5,878,761	23,198,970
1955	204	1,769	3,074,085	16,803,035	6,431,660	23,628,831
1956	192	1,775	3,233,404	17,806,842	6,161,628	24,497,245
1957	193	1,663	3,278,822	18,315,249	6,579,507	24,952,853
Nova Scotia—						
1917	1,337	25,252	18,838,051	102,415,215	57,565,703	159,980,918
1920	1,345	23,425	25,625,089	85,724,785	61,371,243	147,096,028
1929 ⁴	1,094	19,966	16,905,885	50,725,662	35,676,421	89,787,548
1933	1,277	12,211	9,604,680	25,354,319	19,988,257	47,912,432
1939	1,083	17,627	16,651,685	43,332,195	35,885,563	83,139,572
1944	1,281	37,812	59,940,411	103,463,123	93,376,638	204,421,664
1946	1,397	29,724	43,060,259	100,354,480	71,738,873	178,793,420
1949	1,480	29,311	54,686,577	135,841,899	102,294,298	247,592,389
1953	1,591	32,040	76,390,755	180,543,535	127,917,165	320,012,264
1955	1,524	30,218	76,555,923	175,194,419	139,646,423	331,129,690
1956	1,402	30,937	83,948,510	214,779,069	159,820,242	384,398,103
1957	1,356	31,530	90,634,615	238,286,745	175,632,924	427,299,045
New Brunswick—						
1917	943	19,710	12,893,014	32,380,621	27,027,725	59,408,346
1920	901	19,007	19,266,821	60,812,641	45,803,164	106,615,805
1929 ⁴	803	17,952	15,127,716	39,800,366	26,640,786	68,145,012
1933	747	11,336	9,308,100	20,442,421	18,166,713	41,345,622
1939	803	14,501	13,659,162	35,617,614	27,041,195	66,058,151
1944	937	23,164	32,345,080	83,993,599	62,258,478	152,106,577
1946	993	22,732	33,151,919	96,389,299	67,783,377	170,753,741
1949	1,060	23,446	44,219,819	131,804,253	91,187,375	231,506,191
1953	1,094	24,471	59,753,045	163,797,711	120,617,345	295,750,419
1955	1,052	22,434	56,683,345	160,905,219	120,808,214	294,829,050
1956	1,004	22,560	61,063,301	176,440,306	125,314,488	313,280,599
1957	981	20,985	60,485,307	174,741,863	123,547,460	311,795,501
Quebec—						
1917	7,032	188,043	141,008,616	385,212,984	380,882,409	766,095,303
1920	7,530	183,748	202,516,550	553,558,520	499,643,217	1,053,201,737
1929 ⁴	6,948	206,580	225,226,808	537,270,055	537,796,395	1,108,592,775
1933	7,856	157,481	134,696,386	292,560,568	288,504,782	604,496,078
1939	8,373	220,321	223,757,767	566,828,039	470,385,279	1,045,757,585
1944	9,656	424,115	668,156,053	1,494,253,053	1,350,519,134	2,929,685,183
1946	10,818	357,276	565,986,105	1,297,009,099	1,125,991,848	2,497,971,521
1949	11,579	390,275	809,579,270	2,027,793,643	1,651,629,668	3,788,497,123
1953	12,132	441,555	1,225,573,314	2,816,373,112	2,424,647,499	5,386,784,863
1955	12,194	429,575	1,271,077,953	3,152,541,331	2,622,333,056	5,922,367,074
1956	12,112	446,137	1,396,414,564	3,605,621,666	2,888,148,758	6,622,502,699
1957	12,250	449,383	1,477,828,336	3,570,908,799	2,947,897,608	6,679,595,056
Ontario—						
1917	9,061	299,389	258,393,065	794,556,502	662,174,261	1,456,730,763
1920	9,113	295,674	362,941,317	1,071,843,374	792,267,562	1,864,110,036
1929 ⁴	9,348	328,533	406,622,627	1,056,530,202	916,671,816	2,020,492,433
1933	9,542	224,816	220,530,088	464,544,563	465,103,842	958,776,858
1939	9,824	318,871	378,376,209	907,011,461	791,428,569	1,745,674,707
1944	10,731	564,392	975,038,060	2,310,347,858	1,930,043,913	4,339,797,784
1946	11,424	498,120	845,216,547	2,001,900,592	1,659,284,622	3,754,523,701

For footnotes, see end of table, p. 664.

2.—Summary Statistics of Manufactures, by Province, Certain Years 1917-57—concluded

Province or Territory and Year	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture ¹	Gross Value of Products ²
	No.	No.	\$	\$	\$	\$
Ontario—concluded						
1949	12,951	557,190	1,305,544,434	3,256,454,918	2,708,554,013	6,103,804,934
1953	13,114	634,554	2,017,982,218	4,560,134,562	4,130,126,462	8,876,504,990
1955	13,276	613,872	2,088,905,627	5,014,225,423	4,426,654,771	9,617,642,961
1956	13,215	641,190	2,310,634,396	5,683,753,088	4,868,570,251	10,655,098,620
1957	13,580	644,245	2,430,676,464	5,827,317,500	5,047,710,789	11,078,592,683
Manitoba—						
1917	732	18,939	16,513,423	69,715,149	42,280,801	111,995,950
1920	747	23,728	32,372,081	92,729,271	62,776,912	155,506,183
1929 ³	861	24,012	31,224,596	87,832,324	63,925,015	155,266,294
1933	1,010	18,871	18,687,430	44,579,998	37,390,275	83,934,777
1939	1,087	23,910	28,444,798	82,408,293	48,810,544	134,293,595
1944	1,290	40,937	62,758,081	226,234,925	120,339,926	352,334,594
1946	1,357	38,367	61,018,345	223,096,935	122,780,805	351,887,099
1949	1,520	41,956	86,088,380	299,101,498	167,335,495	474,681,912
1953	1,540	43,740	121,126,279	345,403,115	229,797,439	584,872,459
1955	1,549	41,318	121,718,573	329,698,765	247,472,108	588,351,081
1956	1,534	42,821	133,505,971	367,024,766	270,017,554	647,389,185
1957	1,590	43,884	140,200,256	379,799,214	273,162,757	664,529,736
Saskatchewan—						
1917	590	6,230	5,403,332	22,040,674	13,894,179	35,934,853
1920	594	6,709	9,571,175	34,894,105	22,610,861	57,504,966
1929 ⁴	554	7,025	9,105,597	51,003,566	23,002,952	75,368,605
1933	673	4,782	4,848,763	19,124,030	11,478,634	31,559,387
1939	737	6,475	7,346,127	38,782,135	20,283,273	60,650,589
1944	1,054	12,361	17,703,103	131,215,017	40,833,333	175,349,234
1946	1,055	11,957	17,956,317	126,595,761	38,459,630	168,356,619
1949	1,062	10,841	22,273,942	164,349,341	47,356,949	215,742,708
1953	1,062	11,604	32,395,518	180,303,942	79,941,332	266,613,086
1955	960	11,490	34,825,511	174,078,701	113,598,622	295,162,037
1956	798	11,536	36,683,383	176,871,188	113,627,642	298,203,489
1957	844	12,012	40,875,349	189,106,737	109,598,807	300,115,112
Alberta—						
1917	636	9,461	8,662,417	42,632,212	23,893,673	66,515,885
1920	10,955	15,210,628	56,139,646	29,812,891	85,952,537	
1929 ⁴	736	12,216	14,585,734	62,500,175	36,824,969	100,966,196
1933	874	9,753	9,573,468	29,425,975	18,876,929	49,395,514
1939	961	12,712	14,977,700	53,151,149	32,618,153	87,474,080
1944	1,165	22,186	33,227,729	172,082,537	77,415,763	252,400,894
1946	1,315	22,649	34,939,088	169,425,176	83,735,011	257,031,867
1949	1,685	26,425	55,115,554	251,364,059	114,681,296	371,995,120
1953	2,072	33,082	92,605,153	346,221,162	199,660,428	555,814,827
1955	2,126	34,846	106,548,815	366,022,853	263,308,701	641,143,235
1956	1,971	36,792	120,195,105	412,138,247	285,830,811	703,188,739
1957	1,893	39,089	137,077,438	461,134,040	312,037,090	784,480,512
British Columbia—						
1917 ⁵	1,133	37,943	35,426,675	87,637,833	71,673,094	159,310,927
1920 ⁶	1,306	34,360	49,135,005	125,405,084	104,851,641	230,256,725
1929 ⁴	1,569	48,153	57,764,968	141,145,838	113,082,137	260,418,645
1933 ⁶	1,552	28,417	28,469,225	70,166,220	59,034,923	133,879,330
1939	1,710	42,554	53,881,994	136,655,872	103,263,292	247,948,600
1944	2,116	96,062	178,639,118	303,560,016	337,137,197	655,844,689
1946	2,731	75,494	137,606,645	335,708,533	293,352,652	644,527,898
1949	3,493	196,403	222,722	531,112,329	409,665,348	959,008,088
1953	4,317	93,844	300,921,318	724,495,754	615,686,215	1,366,823,690
1955	4,486	102,408	353,810,727	895,973,668	750,877,508	1,679,344,816
1956	4,393	108,595	393,869,388	1,007,882,346	824,249,273	1,859,368,466
1957	4,250	105,631	405,129,932	985,519,123	767,914,301	1,785,298,750
Yukon and N.W.T.—						
1939	5	55	97,766	138,500	92,054	242,968
1944	12	67	118,972	189,718	280,803	489,256
1946	13	92	200,560	172,845	408,727	646,295
1949	18	148	359,068	643,807	604,896	1,377,453
1953	30	177	569,995	1,349,970	1,012,008	2,516,683
1955	26	170	604,607	2,843,895	1,732,511	4,751,000
1956	24	175	681,433	3,867,415	1,076,223	5,130,497
1957	22	166	657,765	1,627,311	1,409,691	3,221,268

¹ See footnote 1, Table 1, p. 662.² In 1952 gross value of products was replaced by selling value of factory shipments; see text on p. 661.³ Excludes figures for the fish processing industry which are not available for 1949.⁴ See footnote 3, Table 1, p. 662.⁵ Includes Yukon Territory.

The figures in Table 3 trace the tendencies in manufacturing industries as clearly as possible from 1917 to 1957. In analysing statistics of production and materials used, price changes should be borne in mind, particularly the inflation of values in the years immediately following World War I, the drop in prices of commodities during the depressions following 1921 and 1930, and the increases again in World War II and the postwar period.

3.—Significant Statistics of Manufactures for Certain Years 1917-57

Item	1917	1920	1929 ¹	1933
Establishments..... No.	21,845	22,532	22,216	23,780
Total employees..... "	606,523	598,893	666,531	468,658
Averages per establishment..... "	27.8	26.6	30.0	19.7
Total earnings..... \$	497,801,844	717,493,876	777,291,217	436,247,824
Averages per establishment..... \$	22,788	31,843	34,988	18,345
Averages per employee..... \$	821	1,198	1,166	931
Supervisory and office employees..... No.	64,918	78,334	88,841	86,636
Averages per establishment..... "	3.0	3.5	4.0	3.6
Total earnings..... \$	85,353,667	141,837,361	175,553,710	139,317,946
Averages per employee..... \$	1,315	1,811	1,976	1,608
Production workers..... No.	541,605	520,559	877,690	382,022
Averages per establishment..... "	24.8	23.1	26.0	16.1
Total earnings..... \$	412,448,177	575,656,515	601,737,507	296,929,878
Averages per employee..... \$	762	1,106	1,042	777
Cost of materials..... \$	1,539,678,811	2,085,271,649	2,029,670,813	967,788,928
Averages per establishment..... \$	70,482	92,547	91,361	40,698
Averages per employee..... \$	2,539	3,482	3,045	2,065
Values added by manufacture ² \$	1,281,131,980	1,621,273,348	1,755,386,937	919,671,181
Averages per establishment ² \$	58,646	71,954	79,015	38,674
Averages per employee ² \$	2,112	2,707	2,634	1,962
Gross value of products..... \$	2,820,810,791	3,706,544,997	3,883,446,116	1,954,075,785
Averages per establishment..... \$	129,128	164,501	174,804	82,173
Averages per employee..... \$	4,651	6,189	6,286	4,170
	1939	1944	1956	1957
Establishments..... No.	24,805	28,483	37,428	37,875
Total employees..... "	658,114	1,222,882	1,353,020	1,359,061
Averages per establishment..... "	26.5	42.9	36.1	35.9
Total earnings..... \$	737,811,153	2,029,621,370	4,570,692,190	4,819,627,999
Averages per establishment..... \$	29,744	71,257	122,120	127,251
Averages per employee..... \$	1,121	1,660	3,378	3,546
Supervisory and office employees..... No.	124,772	192,558	301,297	313,884
Averages per establishment..... "	5.0	6.8	8.1	8.3
Total earnings..... \$	217,839,334	418,065,594	1,272,025,985	1,403,401,749
Averages per employee..... \$	1,746	2,171	4,222	4,471
Production workers..... No.	533,342	1,030,324	1,051,723	1,045,177
Averages per establishment..... "	21.5	38.2	28.1	27.6
Total earnings..... \$	519,971,819	1,611,555,776	3,298,666,205	3,416,226,250
Averages per employee..... \$	975	1,564	3,136	3,269
Cost of materials..... \$	1,836,159,375	4,832,333,356	11,721,536,889	11,900,751,703
Averages per establishment..... \$	74,024	169,657	313,176	314,211
Averages per employee..... \$	2,790	3,952	8,663	8,757
Values added by manufacture ² \$	1,531,051,901	4,015,776,010	9,605,424,579	9,822,084,726
Averages per establishment ² \$	61,724	140,989	256,637	259,329
Averages per employee ² \$	2,326	3,284	7,099	7,227
Gross value of products..... \$	3,474,783,528	9,073,692,519	21,636,745,985 ³	22,183,594,311 ³
Averages per establishment..... \$	140,084	318,565	578,090	585,705
Averages per employee..... \$	5,280	7,420	15,991	16,323

¹ A change in the method of computing the number of production workers in the years 1925 to 1930 inclusive increased the number somewhat over that which the method otherwise used would have given. There was therefore a proportionate reduction in the averages for 1925-30 per employee as compared with what these averages would have been under the other method. In 1931, however, the method in force prior to 1925 was re-adopted. The figures for 1931 and later years are therefore comparable with those for 1924 and earlier years.

² Net value of products; see footnote 1, Table 1, p. 662.

³ In 1952 gross value of products was replaced by value of factory shipments; see text on p. 661.

Subsection 1.—Consumption of Manufactured Products

The value of all manufactured commodities made available for consumption in 1957 was \$23,458,088,464, a figure obtained by adding to the value of manufactured products the value of the imports of manufactured and partly manufactured goods, and deducting the value of the exports. More accurate statistics could be presented were it possible to exclude from the gross value of manufactured products the duplications involved when the products of one manufacturing establishment become the material worked upon in another. Iron, vegetable, wood and paper, non-ferrous metals, non-metallic minerals, animal and textile products were, in that order, the leading groups in the value of finished products made available for consumption in 1957.

Wood and paper, animal, and non-ferrous metal products were manufactured in Canada in greater quantities than required for home consumption, providing export balances in these groups.

On balance, Canada in the past imported large quantities of iron and steel, textiles, chemicals and non-metallic mineral products despite large home production. The expansion of the iron and steel, chemical and non-metallic mineral products industries is enabling Canada to meet a greater proportion of domestic requirements.

4.—Consumption of Manufactured Products, Certain Years 1929-57 and by Industrial Group 1957

Year and Industrial Group	Value of Products Manufactured ¹	Manufactured and Partly Manufactured Goods ²		Value of Manufactured Products Available for Consumption
		Value of Net Imports	Value of Domestic Exports	
	\$	\$	\$	\$
1929.....	3,883,446,116	939,130,201	686,876,071	4,135,700,246
1933.....	1,954,075,785	298,068,344	365,232,113	1,886,912,016
1939.....	3,474,783,528	542,364,930	646,853,938	3,370,294,520
1944.....	8,073,692,519	1,302,413,996	2,668,575,781	7,707,530,734
1946.....	8,035,692,471	1,390,123,100	1,701,677,026	7,724,138,545
1949.....	12,479,593,300	2,043,583,929	2,017,055,615	12,506,121,614
1953.....	17,785,416,854	3,519,418,503	2,781,269,785	18,523,565,572
1955.....	19,513,933,811	3,781,212,944	3,143,126,437	20,152,020,318
1956.....	21,636,748,986	4,639,037,713	3,261,774,777	23,014,011,922
1957³				
Vegetable products.....	2,970,093,020	348,717,922	196,537,562	3,122,273,380
Animal products.....	2,147,412,244	69,957,577	91,601,137	2,125,768,684
Textiles and textile products.....	1,600,969,790	331,035,618	25,238,254	1,906,767,154
Wood and paper products.....	3,952,341,429	211,826,772	1,389,789,134	2,774,379,067
Iron and its products.....	5,161,099,504	2,047,238,228	366,553,865	6,841,783,867
Non-ferrous metal products.....	2,761,595,352	411,116,729	702,967,481	2,469,744,600
Non-metallic mineral products.....	2,094,090,574	306,555,508	148,404,861	2,252,241,221
Chemicals and allied products.....	1,142,459,633	290,961,786	195,303,193	1,238,118,226
Miscellaneous industries.....	353,532,765	508,460,462	134,980,962	727,012,265
Totals, 1957.....	22,183,594,311	4,525,870,602	3,251,376,449	23,458,088,464

¹ In 1952 gross value of products was replaced by selling value of factory shipments; see text on p. 661.
² Figures for the years 1929 and 1933 are for the fiscal years ended Mar. 31 of the following years; 1939-57 figures are for the calendar year. Net imports are total imports less foreign products re-exported.
³ Consumption figures for the major standard industrial classification groups (see p. 671) cannot be calculated because statistics of imports and exports are compiled on the component material classification basis.

Subsection 2.—Value and Volume of Manufactured Production

Value of Manufactured Production.—In the interpretation of manufacturing values over a number of years, variations in the level of prices must be borne in mind. In recent years, owing to great changes in prices, unadjusted value series used in isolation

have become increasingly inadequate as indicators of economic trends. Consequently interest has shifted to measures of volume. The range of prices since 1929, on the base period 1935-39=100, is as follows:—

Year	General Wholesale Price Index	Price Index of Fully or Chiefly Manufactured Products
1929.....	124.6	123.7
1933.....	87.4	93.3
1939.....	99.2	101.9
1944.....	130.6	129.1
1946.....	138.9	138.0
1949.....	198.3	199.2
1953.....	220.7	228.8
1955.....	218.9	224.5
1956.....	225.6	231.5
1957.....	227.4	237.9

Volume of Manufactured Production.—Real income is ultimately measured in goods and services so that the growth of the volume of manufacturing production, as distinguished from its value, becomes a matter of great significance. The important thing to know is whether consumers are getting more goods and services and not whether they are expending more dollars and cents.

During the past few years the Dominion Bureau of Statistics has been engaged in the reconstruction of the index of industrial production* which was first published in 1926 and later subjected to several major revisions. The latest reconstruction was made possible by the availability of a great deal of basic data. Annual statistics valuable for this project have been collected by the Bureau from the end of World War I to the present and the scope of the monthly information has been greatly expanded. Applying methods developed through the experience of the past quarter-century, it has been possible to compute an index with a fair measure of accuracy from 1935 to the present.

The manufacturing sector is divided at the major group level into durable manufactures and non-durable manufactures. The movement of durable goods normally varies from that of non-durables; there tends to be greater fluctuation in durables from prosperity to depression and the demand for non-durables is more constant.

5.—Index of the Total Volume of Manufactured Production classified on the Basis of Durable and Non-durable Goods, 1935-57

(1949=100)

Year	Non-durable Manu- factures	Durable Manu- factures	All Manu- factures	Year	Non-durable Manu- factures	Durable Manu- factures	All Manu- factures
1935.....	44.1	32.7	39.0	1947.....	93.2	93.3	93.2
1936.....	48.1	36.9	43.0	1948.....	96.3	98.4	97.3
1937.....	52.8	44.9	49.2	1949.....	100.0	100.0	100.0
1938.....	49.0	40.9	45.3	1950.....	106.0	106.5	106.2
1939.....	53.7	42.7	48.7	1951.....	110.8	119.9	115.0
1940.....	61.6	59.3	60.4	1952.....	113.2	124.8	118.5
1941.....	73.7	85.8	78.7	1953.....	120.2	133.6	128.4
1942.....	84.3	112.1	96.1	1954.....	121.2	124.8	122.9
1943.....	85.9	128.2	104.0	1955.....	130.4	139.7	134.7
1944.....	89.5	128.3	106.1	1956.....	138.1	153.3	145.1
1945.....	88.2	99.8	92.9	1957.....	139.7	146.7	142.9
1946.....	89.8	79.9	85.2				

The period 1947-56 was characterized by unprecedented industrial expansion. The end of hostilities in 1945 and the subsequent reconversion to peacetime production were attended by declines in output but the upward trend was resumed in 1947. The rate

* For a description of the methods used in constructing the index and a description of its scope, see DBS publication *Revised Index of Industrial Production, 1935-1957* (Catalogue No. 61-502).

of advance slackened moderately in 1948 and 1949 but regained most of its 1947 impetus in 1950 when the outbreak of hostilities in Korea resulted in heavy anticipatory buying on the part of consumers and in growing expenditures for national defence. By 1952 the index of the volume of manufacturing production at 118.5 had surpassed the record wartime level of 106.1 established in 1944. The index continued to advance in 1953, dropped somewhat in 1954 but moved upward again to a new high of 145.1 in 1956. Then, as a result of the minor recession which began in the autumn of 1957, the index for that year slipped to 142.9.

Durable Manufactures.—In the postwar period the volume index of durable manufactures showed a steady advance, except for 1954, reaching a high of 153.3 in 1956. This upward climb was temporarily halted in 1957 when the index dropped to 146.7, a loss of 4.3 p.c. In 1957, all groups in the durable goods sector, with the exception of non-metallic mineral products, reported lower levels of production. The greatest decline of 8.0 p.c. was reported by the wood products group, followed by transportation equipment with 4.2 p.c., non-ferrous metal products 4.1 p.c., electrical apparatus and supplies 4.0 p.c., and iron and steel 3.9 p.c. The non-metallic mineral products group, which produces mainly building materials, managed to maintain the same level of production as in the previous year, a reflection of the high level at which the construction industry operated despite the general slackening in economic activity. On the other hand, the wood products group, which also produces building materials, reported the greatest decline of 8.0 p.c. in physical output, mainly caused by the continuing decline in exports of planks and boards, red cedar shingles, roofing squares and veneer and plywood. Not all industries in the transportation group were affected by the general slowing down in production. The motor vehicle industry with a decline of 12 p.c. in volume was the most severely affected, the number of motor vehicles produced dropping from 471,350 in 1956 to 413,577 in 1957. The motor vehicle parts industry was also affected to the extent of a 10-p.c. decline in output. Aircraft and shipbuilding, on the other hand, operated at higher levels, recording increases of 12 p.c. and 7 p.c., respectively. Railway rolling-stock was also slightly higher, showing an increase of 1 p.c.

6.—Indexes of the Volume of Manufactured Production of the Groups Comprised within the Durable Manufactures Classification, 1935-57

(1949=100)

Year	Wood Products	Iron and Steel Products	Transportation Equipment	Non-ferrous Metal Products	Electrical Apparatus and Supplies	Non-metallic Mineral Products
1935.....	42.3	29.2	34.2	40.1	22.9	24.6
1936.....	47.5	33.8	35.5	46.7	25.0	29.8
1937.....	53.6	42.9	43.4	54.4	32.5	38.2
1938.....	50.7	36.6	38.1	55.8	28.0	34.3
1939.....	54.0	39.1	37.7	58.4	28.4	35.7
1940.....	65.5	58.9	61.1	70.5	41.9	45.0
1941.....	74.5	86.4	106.1	98.9	61.8	60.1
1942.....	77.4	114.7	157.1	130.4	74.9	68.2
1943.....	73.6	131.6	198.4	145.6	85.0	68.8
1944.....	76.1	118.4	235.7	130.9	85.5	66.8
1945.....	77.2	96.3	157.0	98.8	70.7	63.7
1946.....	86.8	80.8	80.6	81.8	67.7	72.0
1947.....	98.2	93.6	95.3	89.6	89.6	86.3
1948.....	100.6	101.5	97.2	99.2	91.5	92.2
1949.....	100.0	100.0	100.0	100.0	100.0	100.0
1950.....	108.2	102.5	108.3	104.0	112.5	111.0
1951.....	114.8	117.0	131.3	114.1	120.7	119.8
1952.....	115.8	118.9	149.1	112.2	124.5	122.8
1953.....	125.4	115.3	165.2	120.1	150.9	139.2
1954.....	124.2	106.2	137.3	117.0	151.7	146.1
1955.....	136.4	123.8	145.1	127.5	176.2	171.1
1956.....	138.3	145.3	157.9	133.0	191.3	191.5
1957.....	127.3	139.6	151.2	127.6	183.6	191.3

Non-durable Manufactures.—The trend of output among the individual groups of the non-durable sector of manufacturing in the postwar period was visibly smoother than in the durable sector but the general trend was the same—except for 1954, no interruption occurred in the upward movement of production—although this advance continued through 1957. Unlike durable goods, non-durable commodities are mostly consumer goods and are less influenced by sudden changes in the international situation or the capital investment programs of producers and governments. By 1957 the non-durables index of output had reached 139.7, the highest on record. For the group as a whole there was an increase of 1.2 p.c. in volume compared with 1956. Trends, however, were mixed. The majority of industrial groups reported increases in volume of production compared with 1956, the greatest being that of 10.3 p.c. shown by the tobacco and tobacco products group. This was followed by chemicals and allied products with an increase of 4.9 p.c., miscellaneous industries 4.3 p.c., beverages 3.5 p.c., products of petroleum and coal 3.4 p.c., foods 1.4 p.c., printing, publishing and allied trades 0.7 p.c. and textiles 0.3 p.c. Three groups reported declines in volume—rubber and rubber products reported a drop of 4.0 p.c., paper products 1.7 p.c. and clothing 0.7 p.c. The leather products group, which has experienced an erratic long-term trend, reported no change in 1957 after showing an 8.2-p.c. increase in 1956 over 1955.

7.—Indexes of the Volume of Manufactured Production of the Groups Comprised within the Non-durable Manufactures Classification, 1935-57

(1949=100)

Year	Foods	Beverages	Tobacco and Tobacco Products	Rubber Products	Leather Products	Textiles
1935.....	51.2	27.1	31.1	49.8	70.8	49.7
1936.....	56.6	32.1	35.7	54.5	71.1	55.5
1937.....	58.7	37.8	41.4	63.6	78.1	59.8
1938.....	59.0	37.1	45.9	55.0	68.9	48.1
1939.....	63.0	38.7	49.2	60.4	80.3	59.5
1940.....	68.5	45.5	53.1	66.0	85.7	81.8
1941.....	79.5	52.9	61.3	87.5	104.2	91.7
1942.....	83.4	60.8	76.0	85.3	110.8	102.0
1943.....	89.9	56.6	82.3	83.3	111.6	93.8
1944.....	97.7	66.7	89.6	84.4	110.5	87.9
1945.....	98.7	71.8	103.2	102.1	114.5	87.5
1946.....	103.0	82.2	90.6	89.5	124.0	88.7
1947.....	100.4	87.3	93.4	127.4	109.1	94.0
1948.....	99.5	95.3	93.4	116.4	95.5	97.3
1949.....	100.0	100.0	100.0	100.0	100.0	100.0
1950.....	104.4	102.1	103.4	116.8	95.6	112.5
1951.....	107.0	106.2	95.0	124.9	90.4	113.1
1952.....	112.8	115.5	108.0	118.9	101.0	102.9
1953.....	115.1	124.6	120.3	130.3	106.4	107.9
1954.....	120.2	121.7	124.7	119.2	100.2	94.3
1955.....	125.6	130.6	135.5	141.0	106.9	114.0
1956.....	131.4	138.4	145.9	154.0	115.6	117.3
1957.....	133.2	143.2	161.0	147.8	115.6	117.6

7.—Indexes of the Volume of Manufactured Production of the Groups Comprised within the Non-durable Manufactures Classification, 1935-57—concluded

Year	Clothing ¹	Paper Products	Printing, Publishing and Allied Industries	Products of Petroleum and Coal	Chemicals and Allied Products	Miscellaneous Industries
1935.....	57.2	38.6	50.2	37.8	31.4	31.4
1936.....	60.5	42.4	53.2	40.8	33.7	34.3
1937.....	65.3	48.9	56.5	44.9	39.3	37.1
1938.....	61.3	39.3	52.9	44.4	37.9	36.9
1939.....	67.3	45.2	54.7	48.1	40.7	38.6
1940.....	78.2	54.3	54.6	53.6	49.8	42.6
1941.....	88.4	61.6	60.6	61.1	77.2	60.8
1942.....	100.9	61.5	61.2	59.4	126.5	88.5
1943.....	97.7	60.0	59.7	65.1	135.1	112.1
1944.....	91.7	63.9	61.4	73.6	142.8	113.0
1945.....	91.4	69.1	67.3	71.9	107.1	98.3
1946.....	95.3	81.0	76.9	74.3	87.0	80.2
1947.....	92.2	89.1	83.6	79.8	90.8	84.1
1948.....	97.6	94.9	92.6	89.9	95.7	81.4
1949.....	100.0	100.0	100.0	100.0	100.0	100.0
1950.....	101.3	109.3	101.5	111.9	107.7	104.8
1951.....	101.2	117.5	105.1	128.5	120.0	119.0
1952.....	111.4	113.4	107.5	140.1	122.3	121.8
1953.....	115.0	118.1	114.7	153.5	139.9	141.1
1954.....	108.9	124.1	121.6	165.0	152.1	134.3
1955.....	112.8	131.0	127.1	188.3	165.5	136.4
1956.....	117.6	137.8	137.3	216.1	174.8	147.0
1957.....	116.8	135.5	138.2	223.5	183.4	153.3

¹ Includes knitting mills.

Section 2.—Manufactured Production Variouslly Classified

Subsection 1.—Manufactures classified by Industrial Groups and Individual Industries

Manufacturing production in Canada, after a downward adjustment in 1954, began to move upward in the summer of 1955 and continued to improve at an accelerated rate throughout 1956 and most of 1957, with the result that the selling value of factory shipments for the latter year was the highest on record at \$22,183,594,311, exceeding the 1956 total by 2.5 p.c. The gain in selling value of shipments, however, was accounted for by higher prices and not by increased volume. Actually there was a drop of 1.5 p.c. in the volume of production. In employment the record was not as impressive as the increase in shipments. Although a record number of persons were employed in 1957, the increase over 1953 was only 2.4 p.c. This compares with an increase of 24.7 p.c. in value of shipments and a 13.1-p.c. increase in volume. Salaries and wages paid in 1957 at \$4,819,627,999 and value added by manufacture at \$9,822,084,726 were also the highest on record.

The decline in the export demand for Canadian manufactured products was an important factor adversely affecting manufacturing operations in 1957. As mentioned previously, there was a marked decline in the export of planks and boards, shingles, veneer and plywood. Wood pulp, newsprint, whisky, wheat flour, aluminum and products, copper and products, zinc, automobiles and parts, fertilizers and aircraft were all lower. There were, however, increases in exports of farm implements and machinery, nickel, artificial crude abrasives, non-farm machinery and synthetic plastics and their manufactures.

The magnitude of the development that has taken place in Canadian manufacturing in the postwar years is strikingly illustrated by the increase of 70.3 p.c. in the physical volume of manufactured products between 1946 and 1956, as compared with an increase of 31 p.c. in population. In the same comparison the increase in the volume of durable goods produced was 91.9 p.c. as against an increase of 53.8 p.c. in non-durables.

With only one exception, all groups in both the durable and non-durable goods sectors recorded marked advances in volume output in the ten-year period; the exception was leather products which showed a decline of 6.8 p.c. Among durable goods, the most striking advance was made by the electrical apparatus and supplies group with an increase of 182.6 p.c., followed by non-metallic mineral products with 166.0 p.c., transportation equipment 95.9 p.c., iron and steel products 79.8 p.c., non-ferrous metal products 62.6 p.c. and wood products 59.3 p.c.

Among the non-durables, the greatest advance was achieved by the products of the petroleum and coal group with an increase of 190.8 p.c. Chemicals and allied products followed with 100.9 p.c., miscellaneous industries 83.3 p.c., printing, publishing and allied industries 78.5 p.c., rubber goods 72.1 p.c., paper products 70.1 p.c., beverages 68.4 p.c., tobacco 61.0 p.c., textiles 32.2 p.c., foods 27.6 p.c. and clothing 23.4 p.c.

8.—Percentage Variations in Employment, Salaries and Wages and Selling Value of Factory Shipments in the Main Industrial Groups, 1957 Compared with 1956

Industrial Group	1957 Compared with 1956		
	Number of Employees	Salaries and Wages	Selling Value of Factory Shipments
	p.c.	p.c.	p.c.
Foods and beverages.....	+ 5.0	+11.0	+ 9.0
Tobacco and tobacco products.....	+ 3.0	+ 9.9	+ 4.4
Rubber products.....	- 4.1	+ 1.3	- 8.3
Leather products.....	- 0.9	+ 3.7	+ 0.7
Textiles.....	- 3.3	+ 1.1	- 2.5
Knitting mills.....	- 1.2	+ 1.2	+ 4.2
Clothing.....	+ 1.5	+ 5.2	+ 2.2
Wood products.....	- 6.4	- 2.0	- 7.7
Paper products.....	+ 0.6	+ 4.2	- 1.2
Printing, publishing and allied industries.....	+ 3.0	+ 7.9	+ 6.2
Iron and steel products.....	+ 0.8	+ 5.3	+ 5.6
Transportation equipment.....	+ 2.4	+ 6.8	+ 3.5
Non-ferrous metal products.....	- 2.7	+ 3.6	- 9.6
Electrical apparatus and supplies.....	- 2.2	+ 3.2	- 1.1
Non-metallic mineral products.....	- 0.1	+ 5.0	+ 5.2
Products of petroleum and coal.....	+ 0.4	+ 8.6	+ 8.3
Chemicals and allied products.....	+ 3.6	+10.6	+ 8.3
Miscellaneous industries.....	+ 4.5	+ 9.5	+ 8.7
Averages, All Groups.....	+ 0.4	+ 5.4	+ 2.5

9.—Summary Statistics of Manufactures, by Industrial Group, 1945-57

NOTE.—Figures for 1946, 1948 and 1950 will be found in the 1952-53 Year Book, pp. 611-613; those for 1952 in the 1955 edition, pp. 645-647; for 1953 in the 1956 edition, pp. 636-638; and for 1954 in the 1957-58 edition, pp. 644-645.

Industrial Group and Year	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Gross Value of Products ¹
	No.	No.	\$	\$	\$	\$
Foods and Beverages—						
1945.....	8, 872	156, 396	224, 908, 882	1, 336, 820, 028	558, 247, 045	1, 921, 774, 601
1946.....	8, 869	167, 865	276, 245, 015	1, 656, 529, 086	695, 092, 932	2, 383, 975, 675
1947.....	8, 558	170, 024	332, 536, 319	2, 009, 246, 062	834, 017, 547	2, 882, 581, 753
1949.....	8, 388	172, 493	392, 859, 435	2, 419, 206, 798	985, 240, 884	3, 450, 030, 515
1951.....	8, 134	180, 085	498, 786, 577	2, 319, 782, 949	1, 257, 652, 677	3, 614, 315, 616
1955.....	8, 023	183, 008	531, 634, 259	2, 474, 174, 069	1, 311, 492, 763	3, 826, 702, 255
1956.....	8, 536	192, 177	590, 025, 115	2, 704, 377, 446	1, 437, 422, 949	4, 171, 971, 292
Tobacco and Tobacco Products—						
1945.....	86	12, 164	15, 738, 041	79, 176, 519	42, 985, 992	122, 543, 932
1946.....	91	10, 880	16, 234, 772	97, 121, 002	49, 221, 094	146, 793, 011
1947.....	72	10, 686	21, 896, 378	113, 357, 196	58, 529, 226	172, 420, 213
1949.....	62	9, 826	24, 438, 218	119, 590, 053	59, 033, 325	179, 177, 093
1951.....	56	9, 529	29, 446, 891	163, 027, 885	88, 652, 932	250, 933, 785
1955.....	51	9, 613	30, 308, 855	150, 111, 499	88, 298, 796	239, 242, 872
1956.....	49	9, 905	33, 322, 821	160, 710, 422	88, 283, 832	249, 734, 356

¹ In 1952 gross value of products was replaced by selling value of factory shipments; see text on p. 661.

9.—Summary Statistics of Manufactures, by Industrial Group, 1945-57—continued

Industrial Group and Year	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Gross Value of Products ¹
	No.	No.	\$	\$	\$	\$
Rubber Products—						
1945.....	55	23,490	39,111,477	78,500,892	98,836,225	181,413,226
1947.....	60	23,475	46,613,893	82,934,625	110,673,007	196,307,734
1949.....	62	20,729	48,172,207	73,895,718	101,705,513	178,503,559
1951.....	67	23,054	64,357,696	146,951,650	161,184,980	311,678,489
1955.....	82	21,913	73,774,964	137,074,770	187,029,017	322,412,379
1956.....	91	23,136	82,154,889	160,686,586	198,602,139	355,583,815
1957.....	88	22,178	83,189,580	144,246,768	176,456,204	326,091,308
Leather Products—						
1945.....	706	34,123	43,268,635	95,006,015	71,297,713	167,888,463
1947.....	792	35,724	52,628,612	123,894,474	86,646,061	212,430,165
1949.....	747	34,900	59,699,886	117,869,462	91,157,684	210,804,174
1951.....	711	31,578	59,668,764	135,114,110	84,885,048	221,832,794
1955.....	646	30,575	68,970,276	108,961,619	107,215,340	218,043,090
1956.....	646	31,384	74,970,034	123,790,832	112,857,380	237,031,985
1957.....	624	31,099	77,768,483	122,529,541	116,139,080	238,789,101
Textiles—						
1945.....	664	66,011	88,372,939	217,289,281	165,689,522	391,182,025
1947.....	747	73,979	116,228,736	289,986,732	215,170,493	514,844,838
1949.....	847	77,773	156,166,554	339,644,950	285,641,367	636,824,130
1951.....	892	81,710	185,030,489	495,304,102	337,936,447	846,477,303
1955.....	977	69,144	187,805,044	408,890,576	314,533,385	734,515,445
1956.....	965	70,873	199,327,510	430,420,090	323,820,707	766,977,127
1957.....	929	68,512	201,578,812	412,433,901	330,984,539	747,666,541 ²
Clothing—						
1945.....	2,676	99,959	131,478,496	251,899,847	222,307,384	476,754,319
1947.....	3,121	110,329	166,951,727	311,018,817	300,527,093	614,594,703
1949.....	3,058	117,752	206,512,782	371,128,833	352,741,236	727,498,836
1951.....	3,083	115,733	222,364,947	405,347,118	370,672,177	780,012,025
1955.....	2,944	111,344	243,644,687	435,588,452	401,110,652	839,548,665
1956.....	2,811	111,712	257,854,168	483,175,047	418,424,063	898,919,689
1957.....	2,860	112,775	269,176,810	487,188,490	436,761,970	921,790,234
Wood Products—						
1945.....	7,656	93,209	119,833,932	240,482,275	208,979,657	454,447,165
1947.....	9,744	120,434	186,467,946	398,854,196	365,050,223	771,403,332
1949.....	11,191	121,632	224,902,644	436,637,453	393,928,758	840,355,634
1951.....	11,975	131,275	283,062,074	610,807,577	529,300,377	1,153,376,772
1955.....	11,804	133,673	354,439,897	723,815,493	631,857,981	1,375,343,554
1956.....	11,103	135,583	376,349,267	788,465,324	646,223,303	1,446,612,560
1957.....	10,796	126,839	368,660,168	730,076,145	585,783,470	1,335,170,860
Paper Products—						
1945.....	475	60,819	109,627,174	255,265,326	241,121,150	536,859,861
1947.....	502	73,445	168,632,394	410,456,570	443,374,435	911,238,813
1949.....	524	76,471	208,348,621	494,300,501	532,288,636	1,093,060,326
1951.....	547	82,889	276,521,006	683,488,653	827,924,962	1,589,842,162
1955.....	580	89,750	349,777,049	793,008,069	867,261,587	1,754,098,505
1956.....	568	93,705	386,886,416	885,056,261	908,726,918	1,887,611,000
1957.....	582	94,283	403,286,291	883,394,993	877,985,557	1,865,979,185
Printing, Publishing and Allied Industries—						
1945.....	2,312	43,565	74,257,775	52,655,848	132,385,988	186,945,134
1947.....	2,458	52,096	101,611,652	82,585,466	178,667,051	263,632,152
1949.....	3,866	61,834	141,489,984	124,684,351	250,162,704	377,908,182
1951.....	4,019	64,694	170,828,730	152,753,412	295,642,569	452,142,515
1955.....	4,494	69,602	234,579,858	199,161,743	415,668,242	619,828,786
1956.....	4,585	72,361	254,372,125	225,201,594	459,224,177	688,434,263
1957.....	4,584	74,559	274,454,964	245,024,240	481,737,438	731,199,828
Iron and Steel Products—						
1945.....	1,903	169,278	313,966,173	395,624,098	527,473,688	952,482,150
1947.....	2,200	162,399	334,044,246	451,289,335	580,342,444	1,064,654,410
1949.....	2,347	163,622	413,227,553	619,499,256	760,934,249	1,419,145,720
1951.....	2,435	183,323	547,314,615	860,565,510	991,334,800	1,904,565,135
1955.....	2,895	181,700	667,657,079	1,005,246,993	1,199,245,953	2,242,717,918
1956.....	2,963	196,918	766,376,087	1,315,813,753	1,429,985,145	2,756,769,477
1957.....	3,073	198,555	807,092,900	1,389,920,624	1,476,346,128	2,912,148,078

¹ In 1952 gross value of products was replaced by selling value of factory shipments; see text on p. 661.² Includes knitting mills.

9.—Summary Statistics of Manufactures, by Industrial Group, 1945-57—concluded

Industrial Group and Year	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Gross Value of Products ¹
	No.	No.	\$	\$	\$	\$
Transportation Equipment—						
1945.....	504	154,844	326,748,794	498,241,686	523,910,119	1,034,666,913
1947.....	562	104,348	230,898,680	426,573,091	366,151,761	803,611,372
1949.....	596	104,750	270,852,111	584,064,330	466,529,164	1,063,211,331
1951.....	599	122,517	368,106,433	870,178,794	657,424,400	1,541,589,828
1955.....	594	131,789	490,434,996	1,117,768,836	809,748,007	1,950,410,035
1956.....	591	141,257	553,571,826	1,286,297,401	906,154,667	2,192,934,975
1957.....	623	144,639	591,461,381	1,288,242,648	956,075,551	2,269,202,982
Non-ferrous Metal Products—						
1945.....	436	44,221	81,889,942	337,872,041	180,653,076	548,853,026
1947.....	503	43,344	91,046,568	434,517,197	201,162,856	668,074,514
1949.....	532	44,698	114,591,106	537,218,214	289,125,045	867,043,028
1951.....	536	50,114	150,733,704	797,412,763	406,616,836	1,253,599,168
1955.....	581	53,311	201,109,879	974,792,188	590,744,048	1,626,980,855
1956.....	581	56,071	220,369,740	1,128,961,556	667,853,158	1,862,156,162
1957.....	592	54,581	228,268,388	1,014,145,515	603,099,206	1,683,382,440
Electrical Apparatus and Supplies—						
1945.....	247	44,129	76,468,795	92,041,030	135,919,899	230,531,874
1947.....	296	52,736	103,891,016	162,131,266	200,859,040	366,506,203
1949.....	365	55,916	137,278,521	212,460,413	269,341,983	486,286,355
1951.....	373	67,626	194,749,038	316,561,307	353,602,872	676,008,959
1955.....	468	76,244	284,031,474	477,655,753	469,918,651	962,615,012
1956.....	473	83,296	310,522,800	558,249,520	577,411,595	1,090,194,175
1957.....	486	81,432	320,416,647	498,242,643	568,587,265	1,078,212,912
Non-metallic Mineral Products—						
1945.....	700	20,269	32,959,877	41,488,955	76,318,456	130,704,796
1947.....	863	26,443	50,456,143	66,266,546	115,277,990	201,786,910
1949.....	1,020	28,139	64,594,354	78,401,065	143,872,615	246,457,799
1951.....	1,042	31,522	86,078,972	109,011,701	195,348,829	334,875,398
1955.....	1,171	38,949	131,006,731	174,489,301	301,656,877	514,118,801
1956.....	1,183	40,165	143,223,163	206,872,491	322,821,042	572,539,111
1957.....	1,231	40,120	150,313,185	209,981,914	340,621,267	602,164,737
Products of Petroleum and Coal—						
1945.....	80	11,532	22,904,418	188,899,911	65,637,131	270,166,984
1947.....	80	12,769	28,689,932	257,420,851	84,073,746	361,333,008
1949.....	77	14,552	39,783,500	391,036,128	117,819,090	533,730,719
1951.....	82	15,598	51,947,890	497,982,695	179,872,590	709,550,035
1955.....	106	17,486	72,436,559	704,384,995	417,349,989	1,160,824,499
1956.....	107	17,685	81,679,924	837,826,914	489,299,180	1,377,226,103
1957.....	106	17,757	88,687,774	898,830,429	534,093,249	1,491,925,837
Chemicals and Allied Products—						
1945.....	986	61,339	107,050,824	228,855,956	252,944,165	498,630,798
1947.....	1,046	39,237	78,993,517	238,310,157	234,056,973	488,307,293
1949.....	1,037	41,323	100,690,662	280,008,945	288,171,551	587,398,215
1951.....	1,037	45,664	131,310,151	366,957,695	384,026,141	776,489,391
1955.....	1,126	51,856	185,267,943	480,104,190	528,928,509	1,044,079,000
1956.....	1,131	52,821	200,742,647	527,564,227	556,240,754	1,111,233,404
1957.....	1,137	54,708	222,044,489	565,746,391	605,273,621	1,203,411,197
Miscellaneous Industries—						
1945.....	692	24,024	37,187,275	83,549,139	59,608,689	144,523,599
1947.....	800	22,247	36,291,117	44,390,608	65,708,603	111,532,447
1949.....	893	26,401	51,147,475	59,778,187	94,600,066	156,363,321
1951.....	1,173	28,766	66,908,755	87,292,415	120,899,546	210,804,555
1955.....	1,524	31,511	89,239,630	114,443,353	164,876,649	283,147,866
1956.....	1,556	33,432	100,348,480	138,869,722	187,988,792	326,580,013
1957.....	1,579	34,942	109,881,191	148,659,593	206,433,400	355,013,423

¹ In 1952 gross value of products was replaced by selling value of factory shipments; see text on p. 661.

Detailed Statistics by Group and Individual Industries.—Table 10 presents detailed statistics for 1957 regarding the individual industries under which all industrial plants in Canada are classified. The industries are assembled under seventeen main groups according to the Standard Industrial Classification.

In interpreting the statistics of individual industries it should be noted that the figures on employment, production, etc., do not refer to individual products but to all the products produced by an industry. For example, the value of production of the confectionery industry amounting to \$133,719,169 in 1957 does not imply that this was the value of confectionery produced. What it means is that the firms whose principal product was confectionery had a value of production of \$133,719,169. This figure, in addition to confectionery, includes all the subsidiary products made by these firms, such as chewing gum valued at \$11,457,836, ice cream which was valued at \$3,688,629, and bread and other bakery products valued at \$886,870. Confectionery is also produced as a subsidiary product by firms credited to other industrial classifications. The quantities and values of the principal individual commodities produced are given in Table 11. Commodities produced in small quantities are not included, but the list covers approximately 75 p.c. of total production.

10.—Principal Statistics of Individual Manufacturing Industries, 1957

Group and Industry	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Foods and Beverages.....	8,536	192,177	590,025,115	2,704,377,446	1,437,422,949	4,171,971,292
Bakery Products—						
Biscuits.....	44	6,245	15,753,469	38,804,082	38,152,436	78,202,784
Bread and other bakery products.....	2,635	35,443	99,777,843	155,755,549	163,882,067	331,131,927
Beverages—						
Breweries.....	57	8,413	37,003,146	59,229,700	169,990,773	231,116,361
Carbonated beverages.....	536	7,730	24,381,659	45,382,195	90,499,808	139,504,272
Distilled liquors.....	21	5,250	19,974,662	52,087,555	98,835,527	148,434,888
Wines.....	19	518	2,161,199	5,881,238	9,603,191	15,190,809
Canning and Processing—						
Fish processing.....	426	13,285	27,616,900	97,969,300	51,207,403	150,708,000
Fruit and vegetable preparations.....	430	17,742	43,711,739	173,507,528	105,081,914	265,469,913
Dairy Products—						
Butter and cheese.....	1,322	20,384	64,080,979	352,690,914	112,483,561	469,851,749
Cheese, process.....	13	1,103	3,966,035	23,876,372	5,382,483	29,512,315
Concentrated milk products.....	29	1,583	5,282,649	70,660,108	19,021,624	89,435,958
Dairy products, other.....	39	766	2,553,225	7,055,932	5,540,243	12,944,902
Milk pasteurizing plants.....	646	8,504	28,791,674	87,940,469	47,389,578	139,229,130
Grain Mill Products—						
Feeds, stock and poultry, prepared.....	855	6,513	18,197,946	167,659,149	47,545,619	219,238,671
Feed mills.....	545	1,539	3,231,929	22,592,273	6,377,286	29,795,069
Flour mills.....	73	4,417	15,214,225	168,634,527	34,189,050	204,376,285
Foods, breakfast.....	17	1,402	4,984,669	13,352,637	18,622,667	32,527,185
Meat Products—						
Animal oils and fats.....	17	347	1,272,209	2,792,703	2,813,567	5,933,578
Sausage and sausage casings.....	102	1,881	5,949,356	21,852,464	11,738,909	33,951,627
Slaughtering and meat packing	160	25,091	94,430,835	720,777,919	181,608,709	907,088,241
Other Food Industries—						
Confectionery.....	213	10,020	25,169,106	68,862,131	63,879,118	133,719,169
Macaroni and kindred products	18	692	1,824,635	6,995,205	6,038,101	13,293,796
Sugar refining.....	11	3,306	12,133,605	112,378,384	40,923,833	155,022,877
Miscellaneous food preparations	308	10,003	32,561,621	227,639,112	106,615,482	336,291,786
Tobacco and Tobacco Products..	49	9,905	33,322,821	160,710,422	89,283,832	249,734,356
Tobacco, cigars and cigarettes.....	33	8,372	29,349,732	100,293,925	82,037,358	182,794,564
Tobacco processing and packing.	16	1,533	3,973,089	60,416,497	6,246,474	66,939,792
Rubber Products.....	88	22,178	83,189,580	144,246,768	176,456,204	326,091,308
Rubber goods (including footwear).....	88	22,178	83,189,580	144,246,768	176,456,204	326,091,308
Leather Products.....	624	31,099	77,768,483	122,529,541	116,139,080	238,789,161
Footwear, leather.....	253	20,246	49,139,983	98,906,951	73,039,505	142,163,496
Gloves and mittens, leather.....	67	1,813	3,755,835	5,712,955	5,624,389	11,115,134

¹ Reported on a production basis.

10.—Principal Statistics of Individual Manufacturing Industries, 1957—continued

Group and Industry	Establishments	Employees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Leather Products—concluded						
Leather tanning.....	51	3,874	12,436,595	29,656,588	18,563,042	49,132,923
Belting, leather.....	11	148	479,934	533,764	576,525	1,166,288
Boot and shoe findings, leather..	30	737	1,875,166	3,912,962	2,851,855	6,800,408
Miscellaneous leather goods, n.e.s.	212	4,281	10,080,970	12,806,321	15,483,764	28,410,852
Textiles.....	929	68,513	201,578,812	412,433,901	330,984,539	747,666,541
Cotton Goods—						
Cotton thread.....	12	896	2,370,642	5,691,064	4,543,661	10,729,590
Cotton yarn and cloth.....	51	21,131	57,252,095	129,868,827	86,853,081	218,903,437
Miscellaneous cotton goods....	14	630	2,087,865	5,724,259	3,405,085	9,346,805
Woolen Goods—						
Woolen cloth.....	63	6,059	16,050,492	29,000,259	21,361,488	53,131,242
Woolen yarn.....	39	3,091	7,822,550	23,548,281	12,701,563	35,936,789
Miscellaneous woolen goods....	33	2,080	6,949,150	15,418,457	14,879,291	29,916,150
Synthetic textiles and silk.....	44	15,251	51,033,746	79,135,506	85,273,644	163,809,960
Other Primary Textiles—						
Dyeing and finishing of textiles	56	2,027	6,393,066	4,282,128	10,394,347	15,153,396
Narrow fabrics.....	49	2,227	6,010,337	9,498,017	9,967,917	19,500,458
Other Textile Industries—						
Automobile accessories, fabric.	20	912	3,003,076	7,084,909	4,858,187	11,990,137
Awnings, tents and sails.....	135	1,728	4,136,462	9,098,407	6,750,421	15,689,203
Bags, cotton and jute.....	34	1,104	3,009,234	21,416,328	5,398,881	26,839,960
Carpets, mats and rugs.....	16	1,798	5,369,911	12,293,107	9,352,488	20,978,722
Cordage, rope and twine.....	16	1,181	4,009,122	9,388,918	7,754,766	16,837,764
Embroidery, pleating, hem-						
stitching, etc.....	150	1,584	3,814,363	2,832,196	6,011,108	8,944,746
Oilcloth, linoleum and other						
coated fabrics.....	17	2,836	11,512,954	20,694,653	17,862,084	38,903,557
Miscellaneous textiles, n.e.s....	180	3,977	10,753,747	27,458,585	23,616,527	51,054,625
Knitting Mills.....	310	21,661	50,216,758	88,752,158	84,147,853	172,161,757
Hosiery.....	137	8,733	21,691,543	26,861,469	34,488,915	62,056,876
Knitted goods.....	173	12,928	28,525,215	61,920,689	49,658,938	110,104,881
Clothing.....	2,550	91,114	218,959,052	398,406,332	352,614,117	749,628,477
Men's, Women's and Children's						
Clothing—						
Children's factory.....	188	7,610	16,284,431	35,109,992	26,015,669	61,139,624
Men's factory.....	559	32,024	77,124,466	152,560,645	121,064,345	272,425,612
Women's factory.....	670	26,192	66,393,053	132,232,239	113,136,082	245,394,628
Contractors, men's.....	153	5,141	9,751,211	1,383,156	11,679,284	13,244,032
Contractors, women's.....	143	3,446	5,765,143	643,902	7,663,655	8,416,634
Miscellaneous Clothing—						
Corsets.....	42	4,041	8,719,042	11,874,240	17,961,950	29,375,873
Fur dressing and dyeing.....	16	1,059	3,385,428	1,248,961	4,909,983	6,299,336
Fur goods.....	540	4,736	15,034,446	38,988,557	23,503,600	62,187,649
Gloves and mittens, fabric....	11	693	1,153,773	2,130,137	2,205,202	4,291,453
Hats and caps.....	146	4,309	10,893,610	13,909,642	16,798,198	30,862,665
Oiled and waterproofed cloth-						
ing.....	9	369	955,238	1,963,282	1,873,635	3,824,273
Clothing, n.e.s.....	73	1,494	3,499,211	6,361,579	5,802,514	12,166,098
Wood Products.....	10,796	126,839	368,660,168	730,076,145	585,783,470	1,335,170,860
Furniture.....	1,962	32,681	97,887,349	151,310,343	152,955,681	307,340,601
Saw and Planing Mills—						
Flooring, hardwood.....	27	1,454	4,062,141	9,714,724	5,716,955	15,509,287
Sash, door and planing mills..	1,781	18,869	53,235,719	137,792,419	82,654,934	224,579,465
Sawmills.....	6,276	50,664	143,166,269	309,580,668	237,700,416	555,688,385 ¹
Veneer and plywood.....	77	10,912	36,101,070	66,161,177	53,565,193	121,159,762
Other Wood Industries—						
Beekeepers' and poultrymen's						
supplies.....	8	58	109,380	214,997	167,767	386,163
Boxes and baskets, wood.....	177	3,513	8,729,364	12,772,449	13,686,090	26,850,510
Cooperage.....	59	580	1,730,504	4,280,724	2,293,820	6,730,691
Excelsior.....	11	113	234,445	265,237	313,691	625,939
Lests, trees and shoe findings..	15	608	1,567,234	1,601,138	2,631,672	4,288,129
Morticians' goods.....	59	1,337	3,626,167	4,644,826	5,428,518	10,242,159
Woodenware.....	29	674	1,411,448	1,833,254	2,026,418	3,869,909
Wood turning.....	64	1,353	3,515,737	4,558,169	4,967,611	9,789,961
Miscellaneous wood products,						
n.e.s.....	251	4,023	13,283,341	25,346,020	21,674,704	48,109,899

¹ Reported on a production basis.

10.—Principal Statistics of Individual Manufacturing Industries, 1957—continued

Group and Industry	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Paper Products.....	582	91,283	403,256,291	883,391,993	877,985,557	1,865,719,185
Boxes and bags, paper.....	220	15,941	52,625,854	154,308,367	97,119,253	253,497,145
Pulp and paper.....	128	65,940	307,627,849	617,175,797	693,475,562	1,411,934,462
Roofing paper.....	25	2,491	9,662,950	21,303,790	19,148,427	40,935,412
Miscellaneous paper goods.....	209	9,911	33,369,638	90,607,039	68,242,315	159,352,166
Printing, Publishing and Allied Industries.....	4,584	74,559	274,454,964	245,024,240	481,737,438	731,199,828
Commercial Printing—						
Printing and bookbinding.....	1,892	26,952	92,439,189	91,880,379	151,527,441	244,690,618
Trade composition.....	51	1,112	4,470,010	525,833	6,550,224	7,135,954
Engraving, Stereotyping and Allied Industries—						
Engraving, stereotyping and electrotyping.....	154	4,618	21,314,961	7,739,341	32,270,649	40,504,237
Lithographing.....	91	4,636	18,301,538	23,968,971	30,108,545	54,135,396
Printing and Publishing—						
Printing and publishing.....	773	30,930	122,602,862	88,247,543	223,553,273	314,344,145
Publishing (only) of periodicals	1,623	6,311	15,326,404	32,662,173	37,727,306	70,389,478 ¹
Iron and Steel Products.....	3,073	198,555	807,092,900	1,386,920,624	1,476,346,128	2,912,148,078
Agricultural implements.....	70	10,271	39,278,116	59,855,771	58,174,333	122,526,538
Boilers, tanks and platemwork.....	102	9,226	38,247,873	62,647,293	67,326,097	121,959,107
Bridge and structural steel work.....	58	15,974	70,956,268	117,061,824	112,319,961	231,450,499 ¹
Castings, iron.....	201	16,777	67,255,724	142,250,365	133,477,902	276,048,007
Hardware, tools and cutlery.....	419	13,852	52,414,842	59,818,358	98,811,701	159,653,914
Heating and cooking apparatus.....	118	8,879	32,162,461	59,962,597	57,562,502	119,332,421
Machinery, household, office and store.....	70	9,665	35,884,788	68,636,393	75,277,132	142,743,904
Machinery, industrial.....	360	27,691	109,192,218	153,043,170	210,725,054	363,000,234
Machine shops.....	656	7,651	26,552,740	22,685,290	39,117,634	62,690,917
Machine tools.....	12	1,559	6,285,526	6,000,246	8,616,552	14,989,027
Primary iron and steel.....	51	35,944	170,779,346	329,582,384	344,565,954	704,565,791
Sheet metal products.....	432	19,733	77,109,470	167,831,957	136,675,531	309,498,908
Wire and wire goods.....	141	9,832	39,359,509	81,652,795	68,653,446	131,238,354
Miscellaneous iron and steel products.....	383	11,501	41,614,019	55,892,181	75,042,329	132,448,457
Transportation Equipment.....	623	144,639	591,461,381	1,288,242,648	956,075,551	2,269,202,982
Aircraft and parts.....	70	41,616	179,699,179	148,546,515	271,064,498	424,442,713 ¹
Bicycles and parts.....	5	659	2,347,661	2,162,497	4,633,585	6,635,621
Boat building.....	206	1,757	5,343,600	5,555,869	7,588,823	12,885,931
Motor vehicles.....	16	33,193	143,629,874	658,913,303	282,786,302	948,596,660
Motor vehicle parts.....	205	20,426	82,943,875	164,311,970	144,243,266	315,593,590
Railway rolling-stock.....	30	27,909	104,168,142	241,830,731	140,475,504	386,722,053 ¹
Shipbuilding.....	68	18,417	71,166,172	63,941,511	101,093,592	167,158,789 ¹
Miscellaneous transportation equipment.....	23	662	2,162,873	2,980,252	4,189,981	7,365,625
Non-ferrous Metal Products....	592	54,581	228,268,388	1,014,145,515	603,099,206	1,683,382,440
Aluminum products.....	94	6,917	27,475,361	56,190,667	33,953,111	91,818,989
Brass and copper products.....	160	8,825	34,803,463	111,347,089	67,852,993	182,396,315
Jewellery and silverware.....	220	4,731	14,572,549	28,885,750	23,502,638	52,789,040
Non-ferrous metal smelting and refining.....	23	29,613	134,775,206	770,004,696	450,666,165	1,280,145,652 ¹
White metal alloys.....	61	3,154	11,258,160	37,734,175	17,866,056	56,969,191
Miscellaneous non-ferrous metal products.....	34	1,341	5,383,649	9,983,138	9,268,243	19,263,253
Electrical Apparatus and Supplies.....	486	81,432	320,416,647	498,242,643	568,587,265	1,078,212,912
Batteries.....	34	2,296	8,948,462	24,673,500	18,030,192	41,678,716
Refrigerators, vacuum cleaners and appliances.....	75	8,789	33,373,881	69,421,712	66,172,088	136,487,474
Machinery, heavy electrical.....	78	24,234	103,078,674	114,474,507	182,442,834	301,241,082
Telecommunication equipment.....	127	18,503	68,088,842	105,999,742	111,127,430	217,726,717
Miscellaneous electrical apparatus and supplies.....	172	27,610	106,926,788	183,773,182	190,814,721	381,078,923
Non-metallic Mineral Products. 1,231	40,120	150,313,185	209,961,914	349,621,267	602,164,737	
Abrasives, artificial.....	17	2,851	12,668,517	20,333,646	24,902,569	51,049,441
Asbestos products.....	17	2,222	8,311,653	13,693,806	15,275,224	29,988,123
Cement, hydraulic.....	17	3,516	15,669,235	16,193,942	61,192,441	97,079,041
Clay products from domestic clay.....	111	4,239	14,745,105	958,936	28,942,251	35,922,158

¹ Reported on a production basis.

10.—Principal Statistics of Individual Manufacturing Industries, 1957—concluded

Group and Industry	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Non-metallic Mineral Products						
—concluded						
Clay products from imported clay.....	34	2,011	7,467,873	6,458,465	13,055,535	19,932,788
Concrete products.....	649	10,369	36,925,763	79,467,786	77,917,728	162,897,684
Glass and glass products.....	115	7,946	28,317,234	34,881,568	51,191,256	90,823,646
Gypsum products.....	12	1,528	5,933,594	12,495,092	15,702,360	29,627,225
Lime.....	39	1,155	3,995,758	1,277,317	12,096,699	17,528,782 ¹
Salt.....	12	875	3,495,303	2,501,549	12,198,835	15,842,049
Sand-lime brick.....	4	102	384,224	237,854	558,177	868,897
Stone products.....	152	2,175	8,088,141	10,240,047	15,715,533	26,809,997
Miscellaneous non-metallic min- eral products.....	52	1,131	4,310,785	11,241,896	11,872,659	23,794,906
Products of Petroleum and Coal	106	17,757	88,687,774	898,830,429	534,093,249	1,491,925,837
Coke and gas products.....	22	3,043	13,178,728	66,119,868	32,176,186	104,748,657 ¹
Petroleum products.....	64	14,308	73,887,074	827,470,815	496,689,523	1,376,558,762 ¹
Miscellaneous products of petrol- eum and coal.....	20	406	1,621,972	5,239,746	5,227,540	10,618,418
Chemicals and Allied Products	1,137	54,708	222,044,489	565,746,391	605,273,621	1,203,411,197
Acids, alkalis and salts.....	54	9,981	46,965,641	95,237,538	104,278,255	215,834,187
Fertilizers.....	44	3,011	12,899,267	47,134,450	35,459,400	83,807,556
Medicinal and pharmaceutical preparations.....	207	8,146	28,656,116	42,336,512	97,276,687	140,092,919
Paints, varnishes and lacquers..	129	6,316	24,288,330	65,590,927	64,528,051	131,132,991
Primary plastics.....	29	3,443	15,709,733	48,088,585	42,457,576	91,836,820
Soaps, washing compounds and cleaning preparations.....	139	3,680	15,411,154	49,530,366	69,747,619	118,872,856
Toilet preparations.....	86	2,429	7,230,451	18,532,081	31,173,115	49,838,084
Vegetable oils.....	11	656	2,663,046	50,899,324	8,924,511	60,951,564
Other Chemical Industries—						
Adhesives.....	29	627	2,321,588	6,475,344	6,720,361	13,707,648
Coal tar distillation.....	11	530	2,600,013	8,200,347	4,809,942	13,663,996
Gases, compressed.....	55	1,624	5,976,046	4,124,884	10,619,406	24,280,515
Inks.....	32	977	4,015,365	6,935,556	9,972,013	16,912,330
Polishes and dressings.....	44	842	3,074,914	10,027,310	12,084,077	22,324,559
Misc. chemical products.....	267	12,446	50,232,825	112,633,167	98,222,608	220,155,372
Miscellaneous Industries	1,579	34,942	109,881,191	148,659,593	206,433,400	355,013,423
Brooms, brushes and mops.....	100	2,100	5,562,393	9,028,238	9,941,527	19,159,950
Clocks, watches and watch cases	35	1,073	3,743,577	8,813,098	8,588,285	17,086,790
Fountain pens and pencils.....	18	1,145	3,410,853	5,651,632	7,888,336	13,218,019
Instruments and related products	78	6,301	25,507,909	28,685,763	51,366,881	79,076,692
Musical instruments.....	25	1,466	4,621,398	4,771,187	10,025,025	14,763,607
Ophthalmic goods.....	37	1,048	3,030,989	2,695,569	3,483,058	6,383,521
Orthopaedic and surgical appli- ances.....	37	378	1,005,924	1,213,467	1,606,449	2,843,269
Plastics products.....	195	4,728	13,896,292	30,597,158	29,134,357	59,840,459
Sporting goods.....	89	1,960	5,495,428	6,508,338	10,019,178	16,407,168
Toys and games.....	68	2,185	5,118,908	9,932,102	9,949,330	19,811,595
Typewriter supplies.....	9	435	1,414,443	3,151,084	3,018,218	6,135,100
Other Miscellaneous Industries—						
Artificial flowers and feathers.	42	491	1,036,607	1,123,129	1,727,223	2,865,924
Buttons, buckles and fasteners.	46	1,612	4,587,098	6,286,162	7,843,988	13,202,829
Candles.....	19	251	685,696	1,324,732	1,577,761	2,909,924
Hair goods.....	13	128	368,508	851,627	595,815	1,480,653
Ice, artificial.....	50	435	1,391,418	282,405	2,738,815	3,539,897
Lamps, electric and lamp shades.....	70	1,240	2,982,792	6,035,408	5,587,794	11,701,618
Models and patterns, excluding paper.....	77	606	2,570,038	1,013,168	3,727,839	4,844,492
Pipes, lighters and smokers' supplies.....	13	172	555,995	1,396,815	1,199,639	2,614,558
Signs, electric, neon and other.	342	3,417	12,228,196	10,490,282	19,151,221	30,204,209
Stamps and stencils, rubber and metal.....	69	957	3,203,206	1,921,079	4,324,681	6,321,795
Statuary, art goods, regalia and novelties.....	99	828	2,018,736	1,802,350	3,156,129	4,980,978
Umbrellas.....	9	140	284,317	596,454	405,583	1,049,501
Miscellaneous industries.....	39	1,846	5,160,410	5,168,346	9,426,268	14,570,770
Totals, All Industries	37,875	1,359,061	4,819,627,999	11,990,751,703	9,822,084,726	22,183,594,311

¹ Reported on a production basis.

11.—Quantity and Value of the Principal Commodities Produced or Shipped by the Manufacturing Industries, 1957

NOTE.—All values in this table are for factory shipments except those marked with an asterisk which are for gross value of products.

Group and Commodity	Unit of Measure	1957	
		Quantity	Value
			\$
Foods—			
Biscuits, all kinds.....	lb.	242,635,871	72,510,280
Bread.....	ton	826,588	198,515,372
Butter, factory made.....	lb.	301,228,146	180,443,025
Cheese, factory made.....	lb.	176,527,261	62,499,685
Coffee, instant.....	"	6,182,099	21,495,741
Coffee and tea, blended, roasted and packed.....	"	119,176,679	115,128,181
Confectionery, all kinds.....	...	...	92,997,492
Cream, sold by dairy factories.....	...	...	46,200,237
Feed, chopped grain.....	ton	526,399	28,662,989
Feeds, stock and poultry, prepared.....	"	2,577,577	200,922,052
Fish, canned and otherwise prepared.....	...	...	68,472,000
Flour, wheat.....	cwt.	36,922,393	155,780,458
Fruits and vegetables, canned.....	lb.	639,280,783	84,641,580
Fruits and vegetables, frozen.....	"	61,667,700	11,240,530
Ice cream, factory made.....	gal.	33,298,147	55,643,254
Jams, jellies and marmalades.....	lb.	107,778,133	22,144,520
Lard.....	"	95,230,114	16,552,350
Margarine and margarine substitutes.....	"	129,893,101	31,167,673
Meats, canned, including poultry, pastes, etc.....	"	80,417,299	36,858,719
Meats, cooked, including sausage, wieners, etc.....	"	236,808,326	118,505,931
Meats, cured and smoked.....	"	238,642,874	136,793,120
Meats, sold fresh and frozen, including poultry.....	"	1,500,316,660	507,527,651
Milk, sold by dairy factories.....	gal.	347,409,793	271,589,825
Milk, evaporated and condensed.....	lb.	321,474,626	41,559,500
Pickles, relishes and catsup.....	...	...	29,068,762
Pies, cakes and pastry.....	...	...	87,010,429
Powders, edible (custard, jelly, milk, etc.).....	...	...	48,062,653
Shortening.....	lb.	163,039,472	38,973,851
Soups, canned (except infants').....	"	265,349,422	43,366,421
Sugar, granulated (cane and beet).....	"	1,298,660,948	125,994,336
Beverages—			
Beer, ale, stout and porter (sales) ¹	gal.	224,782,975	364,993,057
Beverage spirits sold (net sales).....	pt. gal.	14,544,797	118,234,961
Carbonated beverages.....	gal.	136,820,244	123,101,902
Wine (sold).....	Imp. gal.	5,625,244	14,963,603
Tobacco and Tobacco Products—¹			
Cigarettes.....	'000	30,394,572	407,237,324
Cigars.....	"	283,706	20,442,301
Tobacco, chewing, smoking and snuff.....	lb.	22,585,142	56,465,323
Tobacco, raw leaf, processed.....	"	109,737,052	66,939,792*
Textiles—			
Bags, cotton and jute.....	No.	121,094,180	21,793,800
Blankets.....	...	...	14,894,906
Carpets, mats and rugs.....	...	...	20,152,188
Cotton fabrics.....	...	...	120,453,180
Synthetic woven fabrics, all types.....	yd.	84,161,651	58,679,628
Tire fabrics.....	lb.	27,869,198	24,520,171
Twine and cordage.....	...	...	14,352,160
Woven fabrics, wool or containing wool.....	sq. yd.	28,627,289	46,929,079
Yarns, cotton, rayon, wool, etc. (for sale).....	...	...	134,742,441
Clothing—¹			
Coats and overcoats, cloth, men's and youths'.....	No.	661,168	18,081,197
Coats, wool, women's and misses'.....	"	1,371,524	34,497,466
Coats, fur, women's (factory made).....	"	216,276	50,548,489
Short coats (including windbreakers, mackinaws, parkas, leather coats, etc.).....	...	...	36,319,800
Dresses, women's and misses'.....	No.	12,194,249	84,210,669
Footwear, leather.....	pr.	35,981,934	132,317,714
Footwear, rubber.....	"	10,436,008	27,202,309
Gloves and mittens, all kinds.....	doz. pr.	1,858,558	16,014,951
Hats and caps, men's.....	doz.	741,785	11,759,399
Hats, women's and children's.....	"	471,372	14,396,826
Hosiery, all kinds.....	doz. pr.	10,423,093	59,092,323

¹ Includes duties and taxes.

² Includes knitting mills.

11.—Quantity and Value of the Principal Commodities Produced or Shipped by the Manufacturing Industries, 1957—continued

Group and Commodity	Unit of Measure	1957	
		Quantity	Value
Clothing—concluded			
Shirts, fine, work and sport.....	doz.	2,858,381	60,670,338
Sport suits, slacks and other sport clothing, <i>n.e.s.</i>.....	...	...	22,782,147
Suits, men's and youths', fine woollen.....	No.	1,697,588	59,244,673
Underwear.....	...	...	54,720,639
Wood Products—			
Boxes, wooden.....	...	...	12,696,452
Lumber, planed.....	M ft. b.m.	1,344,685	95,655,742
Lumber, sawn.....	...	7,102,365	466,305,564*
Pulp, wood, made for sale.....	ton	1,804,697	220,550,548
Sash, doors and other mill work.....	...	...	71,901,518
Paper Products—			
Bags, paper.....	...	...	52,641,020
Boxes, paper.....	...	...	188,920,925
Paper boards, all types (basic).....	ton	1,114,726	143,079,419*
Paper, book and writing (basic).....	"	335,037	86,990,136*
Paper, newsprint (basic).....	"	6,361,651	729,009,081*
Paper, wrapping (basic).....	"	277,208	60,402,276*
Printing, Publishing and Allied Industries—			
Books and catalogues, printed and bound.....	...	...	41,211,831
Other advertising matter, printed.....	...	...	60,093,857
Periodicals printed for publishers.....	...	...	32,083,464
Periodicals Printed by Publishers—			
Subscriptions and sales.....	...	...	68,569,295
Gross revenue from advertising.....	...	...	201,637,619
Sheet forms, commercial, legal, etc., printed.....	...	...	52,744,086
Iron and Steel Products—			
Bars, iron and steel, hot-rolled (sold).....	ton	718,864	107,391,265
Boilers, heating and power.....	...	...	23,872,909
Castings, grey iron, made for sale.....	...	...	36,892,439
Farm implements and parts.....	...	...	114,545,989
Forgings, steel and other.....	...	...	32,536,439
Hardware, builders', pole line and other.....	...	...	49,128,000
Machinery, industrial, household, office and store, and parts.....	...	...	734,382,000
Pig iron (sold).....	ton	734,353	40,953,372
Pipes, tubing and fittings, iron and steel.....	...	...	203,577,000
Rolled iron and steel forms, semi-finished (sold).....	net ton	287,469	28,261,857
Sheets, bars and other cold-rolled products (sold).....	"	776,019	143,420,231
Steel ingots and castings (sold).....	"	187,806	65,553,873
Steel shapes erected, buildings, bridges, etc.....	"	506,348	181,098,870*
Steel shapes, structural, made in primary mills.....	"	341,975	42,823,449
Stoves, coal, wood, electric and gas.....	...	...	51,324,569
Tools and implements, hand, all kinds and parts.....	...	...	39,118,310
Wire, wire rope and cable, steel.....	...	...	54,623,013
Transportation Equipment—			
Aircraft, completed in year.....	...	...	129,257,269*
Automobiles, commercial.....	No.	71,424	141,086,301
Automobiles, passenger.....	"	334,112	638,058,318
Automobile parts and accessories, including tires.....	...	...	521,700,000
Buses.....	No.	374	8,435,458
Cars, railway, complete, freight and passenger.....	"	10,475	98,665,682*
Locomotives, diesel-electric, new.....	"	521	94,417,333*
Ships and ship repairs.....	...	...	206,666,477*
Non-ferrous Metal Products—			
Jewellery.....	...	...	23,369,561
Kitchenware, aluminum.....	...	...	8,801,989
Silverware.....	...	...	10,283,564
Smelter and refinery products.....	...	...	1,280,145,652*
Electrical Apparatus and Supplies—			
Batteries, electric, storage.....	...	...	29,882,278
Radio receiving sets, complete.....	No.	749,494	26,130,298
Refrigerators, household, mechanical.....	"	235,539	42,429,856
Television sets.....	"	434,504	68,012,547
Wires and cables, electric.....	...	...	153,845,828

11.—Quantity and Value of the Principal Commodities Produced or Shipped by the Manufacturing Industries, 1957—concluded

Group and Commodity	Unit of Measure	1957	
		Quantity	Value
Non-metallic Mineral Products—			
Abrasives, artificial.....	ton	301,508	33,731,281
Coke, gas-house.....	"	4,094,975	63,442,456*
Concrete, ready-mixed.....	"	...	82,755,760
Gas, manufactured and natural (sold).....	M cu. ft.	184,738,053	99,725,581*
Glass, pressed and blown (bottles, sealers, ovenware, etc.).....	...	...	53,361,406
Chemicals and Allied Products—			
Calcium and sodium compounds.....	...	...	55,369,949
Fertilizers, mixed.....	...	...	38,599,907
Medicinal and pharmaceutical preparations.....	...	...	126,297,000
Paints, enamels, and varnishes.....	...	...	124,031,000
Synthetic resins.....	...	...	54,930,000
Soaps and synthetic detergents.....	lb.	318,658,000	82,947,000
Toilet preparations.....	...	...	63,254,988
Miscellaneous—			
Bags, hand and hand luggage.....	...	...	14,907,831
Brooms and household brushes.....	dos.	877,517	5,366,801
Cans, metal, for food.....	...	...	67,372,528
Furniture, wood and metal, including beds and couches.....	...	...	228,019,179
Gasoline.....	Imp. gal.	3,061,716,351	610,610,787*
Leather, shoe.....	...	...	36,959,207
Mattresses.....	...	...	23,518,523
Mops, floor.....	...	...	3,704,721
Oil, fuel, made for sale.....	Imp. gal.	4,194,511,993	564,811,063*
Pianos, organs and parts.....	...	...	5,188,938
Scientific and professional equipment.....	...	...	67,278,647
Sporting goods.....	...	...	20,020,524
Springs, bed and other furniture.....	...	...	13,923,384
Toys and games.....	...	...	25,274,880

Subsection 2.—Manufactures classified by Origin of Materials

The distinction made between farm materials of Canadian and foreign origin is based on whether the materials are indigenous to Canada rather than on their actual source. Thus, the industries included in the foreign origin classes are those depending upon materials that cannot be grown in Canada, such as tea, coffee, spices, cane sugar, rice, rubber, cotton, etc. Industries included in the Canadian origin classes may, however, be using large quantities of imported materials.

The mineral origin group includes, in addition to non-ferrous metals so largely produced in Canada, the manufactures of iron and steel, of petroleum, and of other mineral substances, the raw materials for which are largely imported. Products of mineral origin, with the exception of fuels, are nearly all durable goods.

12.—Principal Statistics of Manufacturing Industries classified according to Origin of Materials Used, by Main Group, 1957

Origin of Material Used	Estab-lish-ments	Em-ploy-ees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Farm origin.....	10,056	321,820	961,295,682	3,509,683,926	2,091,731,444	5,640,309,385
Mineral origin.....	7,166	586,759	2,395,852,383	5,764,015,625	4,989,569,774	11,046,827,769
Forest origin.....	15,808	291,063	1,025,086,462	1,850,756,037	1,913,235,816	3,891,585,636
Marine origin.....	426	13,285	27,616,900	97,969,300	51,207,403	150,708,000
Wildlife origin.....	556	5,795	18,419,874	40,237,518	28,413,583	68,486,985
Mixed origin.....	3,863	140,339	391,356,698	638,089,297	747,926,706	1,385,676,536
Grand Totals.....	37,875	1,359,061	4,819,627,999	11,900,751,703	9,822,084,726	22,183,594,311

12.—Principal Statistics of Manufacturing Industries classified according to Origin of Materials Used, by Main Group, 1957—concluded

Origin of Material Used	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Farm Origin Group—						
From field crops.....	6,241	180,869	554,132,457	1,865,303,599	1,398,575,231	3,287,940,237
From animal husbandry	3,815	140,951	407,163,225	1,644,380,327	693,156,213	2,352,369,148
Totals, Farm Origin.	10,056	321,820	961,295,682	3,509,683,926	2,091,731,444	5,640,309,385
Canadian origin.....	9,110	259,709	762,715,181	3,016,990,759	1,659,177,787	4,701,843,711
Foreign origin.....	946	62,111	198,580,501	492,693,167	432,553,657	938,465,674

Subsection 3.—Manufactures classified by Type of Ownership

The figures showing the classification of the type of ownership under which Canadian manufacturers operate are available from 1946, although the first survey did not include the fish curing and packing industry. Its inclusion in subsequent years has not materially altered the percentage distribution of individual ownership, incorporated companies, etc.

As is to be expected, the smaller establishments, regardless of the type of products manufactured, are carried on under individual ownership. In that category industries conducted on a small scale contain a large number of establishments, the percentage decreasing as the scale of operations increases, as shown for 1957 in Table 13.

13.—Percentage Distribution of Manufacturing Establishments, Employees and Shipments, by Type of Ownership and Size of Establishment, 1957

Item and Type of Ownership	Under \$25,000	\$25,000 to \$99,999	\$100,000 to \$499,999	\$500,000 or Over
	p. c.	p. c.	p. c.	p. c.
Establishments—				
Individual ownership.....	73.8	44.7	12.2	0.7
Partnerships.....	15.5	16.9	8.1	1.0
Incorporated companies.....	10.1	35.5	74.4	96.4
Co-operatives.....	0.6	2.9	5.3	1.9
Totals.....	100.0	100.0	100.0	100.0
Employees—				
Individual ownership.....	66.8	38.3	7.7	0.2
Partnerships.....	19.1	17.2	6.7	0.3
Incorporated companies.....	13.5	42.9	83.7	98.9
Co-operatives.....	0.6	1.6	1.9	0.6
Totals.....	100.0	100.0	100.0	100.0
Factory Shipments—				
Individual ownership.....	69.7	40.5	9.0	0.2
Partnerships.....	16.1	16.5	6.9	0.2
Incorporated companies.....	13.3	39.5	79.3	98.7
Co-operatives.....	0.9	3.5	4.8	0.9
Totals.....	100.0	100.0	100.0	100.0

Of the 37,875 establishments operating in 1957, 1,623 establishments in the periodical publishing industry were unclassifiable, leaving 36,252 establishments in the four categories of ownership. Individual ownership numbered 14,721 establishments, partnerships 4,352, incorporated companies 16,260 and co-operatives 919. The percentage distribution of the four categories of ownership is given in Table 14 for 1948-57.

14.—Percentage Distribution of Establishments in Manufacturing Industries classified by Type of Ownership, 1948-57, and by Province and Industrial Group, 1957

Year, Province and Industrial Group	Individual Ownership	Partnerships	Incorporated Companies	Co-operatives	Total
	p.c.	p.c.	p.c.	p.c.	p.c.
1948.....	46.2	16.4	34.4	3.0	100.0
1949.....	46.0	15.8	35.3	2.9	100.0
1950.....	45.6	15.0	36.3	3.1	100.0
1951.....	44.6	15.5	36.9	3.0	100.0
1952.....	44.9	15.4	36.9	2.8	100.0
1953.....	44.4	14.8	38.2	2.6	100.0
1954.....	43.6	14.3	39.5	2.6	100.0
1955.....	42.7	13.6	41.1	2.6	100.0
1956.....	41.4	12.7	43.4	2.5	100.0
1957					
Newfoundland.....	53.4	28.3	18.2	0.1	100.0
Prince Edward Island.....	46.8	17.4	30.0	5.8	100.0
Nova Scotia.....	50.0	13.5	35.0	1.5	100.0
New Brunswick.....	52.6	10.3	34.8	2.3	100.0
Quebec.....	45.7	10.0	40.3	4.0	100.0
Ontario.....	34.8	12.0	51.5	1.7	100.0
Manitoba.....	39.1	11.3	48.0	1.6	100.0
Saskatchewan.....	49.2	13.6	31.6	5.6	100.0
Alberta.....	42.0	12.4	42.3	3.3	100.0
British Columbia.....	33.8	13.6	51.4	1.2	100.0
Yukon and Northwest Territories.....	22.8	13.6	63.6	—	100.0
Canada, 1957.....	40.6	12.0	41.9	2.5	100.0
Foods and beverages.....	44.2	10.5	34.9	10.4	100.0
Tobacco and tobacco products.....	28.6	2.0	67.3	4.1	100.0
Rubber products.....	10.2	4.6	85.2	—	100.0
Leather products.....	27.7	8.5	63.8	—	100.0
Textiles.....	28.5	10.5	60.8	0.2	100.0
Knitting mills.....	16.5	7.7	75.8	—	100.0
Clothing.....	26.4	14.8	58.8	—	100.0
Wood products.....	58.7	15.8	25.4	0.1	100.0
Paper products.....	8.6	2.9	88.5	—	100.0
Printing, publishing and allied industries ¹	42.1	13.6	44.2	0.1	100.0
Iron and steel products.....	22.6	9.7	67.7	—	100.0
Transportation equipment.....	25.0	9.3	65.7	—	100.0
Non-ferrous metal products.....	24.0	10.6	65.4	—	100.0
Electrical apparatus and supplies.....	7.2	2.5	90.3	—	100.0
Non-metallic mineral products.....	30.3	11.4	58.2	0.1	100.0
Products of petroleum and coal.....	2.8	—	96.2	1.0	100.0
Chemicals and allied products.....	15.0	3.3	81.3	0.4	100.0
Miscellaneous manufacturing industries.....	34.8	11.1	54.1	—	100.0

¹ Four main categories of ownership only; the non-classifiable group is not included (see text on p. 681).

The establishments operating under individual ownership are not as important from the point of view of employment provided as their large numbers would indicate. According to Tables 15 and 16 these establishments, which comprise 41 p.c. of the number, had only 5 p.c. of the total employees. Partnerships accounted for 12 p.c. of the number of establishments and 2 p.c. of the total employees. Incorporated companies with 45 p.c. of the number of establishments had almost 92 p.c. of the employees. Co-operatives with 2 p.c. of the number had less than 1 p.c. of the employees.

On the basis of employment provided, incorporated companies are, by a wide margin, the most important factor in the employment field. In the petroleum and coal products group practically 100 p.c. of the employees were reported by such companies. Incorporated companies in the tobacco, rubber, paper, transportation equipment and electrical apparatus and supplies groups had 99 p.c. of the employees; non-ferrous metal products and chemical and allied products had 98 p.c.; textiles and iron and steel products 97 p.c.; knitting mills and non-metallic mineral products 94 p.c.; leather goods 93 p.c.; miscellaneous industries 90 p.c.; printing, publishing and allied industries 88 p.c.; clothing 85 p.c.; and foods and beverages 83 p.c. Companies in the wood products group, with 78 p.c., reported the lowest proportion of employment.

15.—Percentage Distribution of Employment in the Manufacturing Industries classified by Type of Ownership, 1948-57, and by Province and Industrial Group, 1957

Year, Province and Industrial Group	Individual Ownership	Partner-ships	Incorporated Companies	Co-operatives	Total
	p.c.	p.c.	p.c.	p.c.	p.c.
1948.....	7.1	4.4	87.5	1.0	100.0
1949.....	6.8	4.2	88.0	1.0	100.0
1950.....	6.3	3.9	88.8	1.0	100.0
1951.....	6.1	3.7	89.3	0.9	100.0
1952.....	5.9	3.6	89.6	0.9	100.0
1953.....	5.7	3.3	90.2	0.8	100.0
1954.....	5.4	3.3	90.5	0.8	100.0
1955.....	5.2	2.9	91.0	0.9	100.0
1956.....	4.8	2.6	91.8	0.8	100.0
1957					
Newfoundland.....	6.9	5.6	87.5	—	100.0
Prince Edward Island.....	18.6	11.4	63.1	6.9	100.0
Nova Scotia.....	8.1	2.5	88.2	1.2	100.0
New Brunswick.....	8.7	2.5	87.4	1.4	100.0
Quebec.....	5.8	2.8	90.6	0.8	100.0
Ontario.....	3.0	2.0	94.7	0.3	100.0
Manitoba.....	4.9	2.8	91.5	0.8	100.0
Saskatchewan.....	9.5	4.8	73.3	12.4	100.0
Alberta.....	6.3	3.6	87.7	2.0	100.0
British Columbia.....	4.3	2.6	91.2	1.9	100.0
Yukon and Northwest Territories.....	9.0	6.7	84.3	—	100.0
Canada, 1957.....	4.5	2.4	92.2	0.9	100.0
Foods and beverages.....	8.6	3.2	83.3	4.9	100.0
Tobacco and tobacco products.....	0.8 ¹	—	99.2 ²	—	100.0
Rubber products.....	0.2	—	99.8	—	100.0
Leather products.....	5.3	2.2	92.5	—	100.0
Textiles.....	2.3	1.5	96.2 ²	—	100.0
Knitting mills.....	2.8	2.8	94.4	—	100.0
Clothing.....	7.5	7.1	85.4	—	100.0
Wood products.....	15.4	6.8	77.5	0.3	100.0
Paper products.....	0.5	0.2	99.3	—	100.0
Printing, publishing and allied industries ³	7.5	4.3	87.7	0.5	100.0
Iron and steel products.....	1.8	1.3	96.9 ²	—	100.0
Transportation equipment.....	0.6	0.2	99.3	—	100.0
Non-ferrous metal products.....	1.2	0.8	98.0	—	100.0
Electrical apparatus and supplies.....	0.2	0.2	99.6	—	100.0
Non-metallic mineral products.....	3.4	2.7	93.9 ²	—	100.0
Products of petroleum and coal.....	—	—	100.0 ^{2,4}	—	100.0
Chemicals and allied products.....	0.9	0.4	98.4	0.3	100.0
Miscellaneous manufacturing industries.....	6.2	3.6	90.2	—	100.0

¹ Includes partnerships. ² Includes co-operatives.
the non-classifiable group is not included (see text on p. 681).

³ Four main categories of ownership only;

⁴ Includes individual ownership.

16.—Principal Statistics of Sixty Manufacturing Industries classified by Size of Establishment and Type of Ownership, 1957

Size of Establishment and Type of Ownership	Establishments	Employees	Salaries and Wages	Cost of Fuel and Electricity	Cost at Plant of Materials Used	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Under \$25,000.....	13,779	28,200	44,420,630	4,185,062	60,302,667	132,484,661
Individual ownership.....	9,239	17,955	28,438,244	2,884,103	38,562,328	86,838,735
Partnerships.....	1,937	5,119	7,309,342	637,840	8,338,711	20,054,084
Incorporated companies.....	1,267	3,622	7,223,361	633,089	6,813,985	16,619,212
Co-operatives.....	77	160	168,407	30,030	888,348	1,015,821
Not classifiable ¹	1,259	1,344	1,281,276	..	5,699,295	7,956,809
\$25,000 to \$99,999.....	10,084	71,320	171,333,352	13,828,421	265,150,591	541,930,758
Individual ownership.....	4,390	26,850	59,810,286	5,557,711	110,853,624	214,627,365
Partnerships.....	1,661	12,059	28,784,213	2,144,712	40,807,636	87,180,620
Incorporated companies.....	3,485	30,061	77,722,089	5,753,654	91,231,019	209,312,921
Co-operatives.....	285	1,136	1,890,565	372,344	14,883,548	18,236,263
Not classifiable ¹	263	1,214	3,126,199	..	7,374,764	12,573,569
\$100,000 to \$499,999.....	8,752	189,493	542,780,013	38,346,888	1,052,483,504	2,002,370,531
Individual ownership.....	1,057	14,429	35,701,636	3,501,085	110,053,240	177,539,966
Partnerships.....	703	12,551	34,403,057	2,483,021	77,649,228	137,312,989
Incorporated companies.....	6,446	156,995	460,063,765	30,897,924	776,235,992	1,573,087,721
Co-operatives.....	454	3,492	7,841,290	1,464,858	79,033,865	95,716,206
Not classifiable ¹	92	2,026	4,770,265	..	9,511,179	18,713,649
\$1,500,000 or Over.....	5,260	1,070,048	4,061,094,004	498,951,417	10,532,814,441	19,506,898,361
Individual ownership.....	35	2,192	6,308,299	360,443	21,565,508	34,280,053
Partnerships.....	51	3,317	9,836,183	530,725	32,756,906	51,207,438
Incorporated companies.....	5,062	1,056,703	4,018,482,636	494,926,512	10,328,461,784	19,218,788,729
Co-operatives.....	103	6,109	20,318,222	3,133,737	129,953,808	171,406,690
Not classifiable ¹	9	1,727	6,148,664	..	10,076,935	31,145,451
Totals.....	37,875	1,359,061	4,819,627,999	555,311,788	11,900,751,703	22,183,594,311

¹ See text on p. 681.

Subsection 4.—Leading Manufacturing Industries

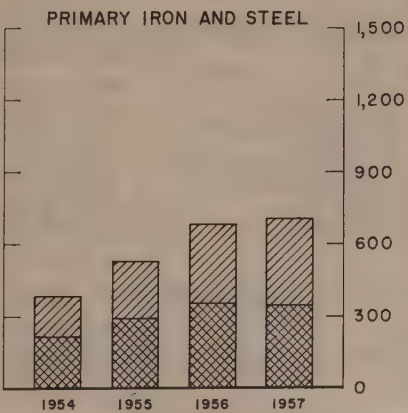
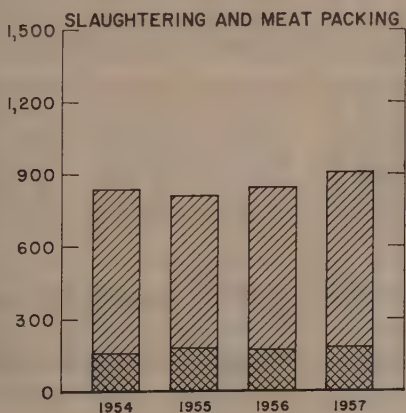
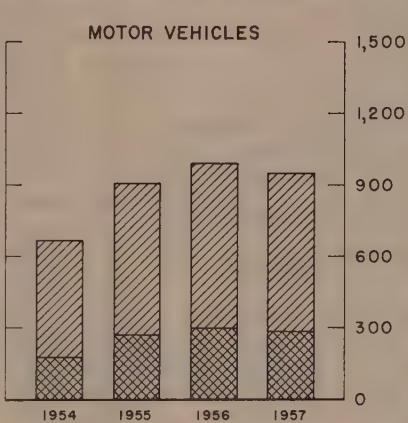
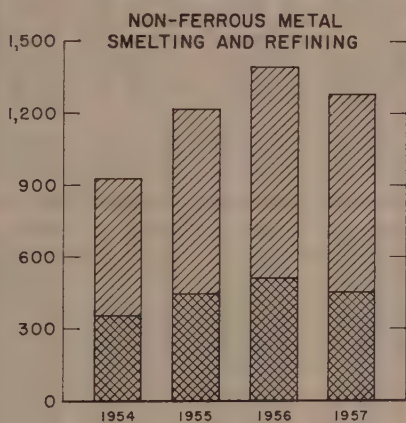
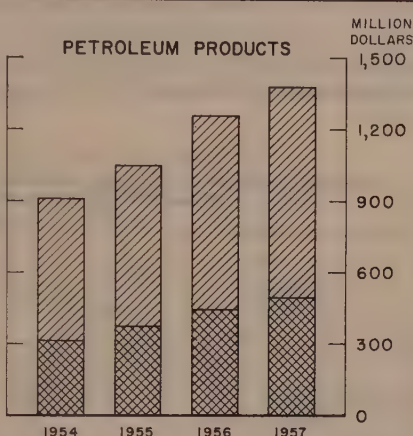
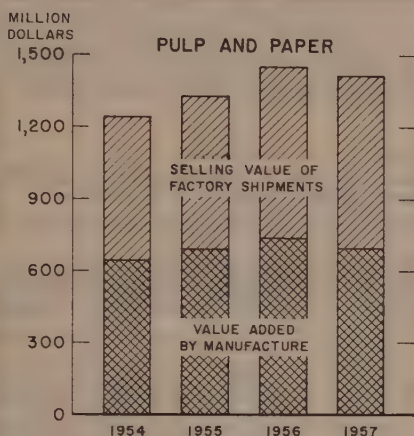
The ranks of the ten leading industries in 1957, from the standpoint of selling value of factory shipments, are compared with their respective ranks in significant years since 1922 in the following statement:—

Industry	1922	1929	1933	Rank in— 1939	1944	1949	1957
Pulp and paper.....	2	1	1	2	5	1	1
Petroleum products.....	9	10	6	6	14	5	2
Non-ferrous metal smelting and refining.....	1	9	2	1	2	3	3
Motor vehicles.....	6	4	11	5	7	4	4
Slaughtering and meat packing.....	3	2	3	3	1	2	5
Primary iron and steel.....	20	16	31	11	13	8	6
Sawmills.....	4	5	14	8	11	6	7
Butter and cheese.....	5	6	5	4	10	7	8
Aircraft and parts.....	1	1	1	1	4	1	9
Railway rolling-stock.....	24	7	23	16	16	9	10

¹ Did not rank among the forty leading industries that year.

A prominent feature of Canadian manufacturing development during this period has been the movement of non-ferrous metal smelting to one of the top three places, the advance of the primary iron and steel industry particularly since the war years and the increasing prominence of the petroleum industry. During the Second World War the industries engaged in producing the equipment needed by the Armed Forces, such as shipbuilding, aircraft, automobiles, miscellaneous chemical products, and primary iron and steel, advanced to higher positions. When the War ended, certain industries engaged in the production of consumer goods bettered their positions.

TRENDS IN CANADA'S LEADING MANUFACTURING INDUSTRIES 1954-57



During the past few years the ranking changed very little. In 1957, as compared with 1956, petroleum products moved ahead of non-ferrous metal smelting and refining, while aircraft and parts moved up from eleventh to ninth place and railway rolling-stock from twelfth to tenth place. Miscellaneous electrical apparatus and supplies and rubber goods which ranked ninth and tenth in 1956 dropped to eleventh and fifteenth place respectively in 1957.

17.—Principal Statistics of the Forty Leading Manufacturing Industries, ranked according to the Selling Value of Factory Shipments, 1957

Industry	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	£	\$
1 Pulp and paper.....	128	65,940	307,627,849	617,175,797	693,475,562	1,411,934,462
2 Petroleum products.....	64	14,308	73,887,074	827,470,815	496,689,523	1,376,558,762 ¹
3 Non-ferrous metal smelting and refining.....	23	29,613	134,775,206	770,004,696	450,666,165	1,280,145,652 ¹
4 Motor vehicles.....	16	33,193	143,629,874	658,913,303	282,786,302	948,596,660
5 Slaughtering and meat packing.....	160	25,091	94,430,835	120,777,919	181,608,709	907,088,241
6 Primary iron and steel.....	51	35,944	170,779,346	329,582,384	344,565,954	704,565,791
7 Sawmills.....	6,276	50,664	143,166,269	309,580,668	237,700,416	555,688,385 ¹
8 Butter and cheese.....	1,322	20,384	64,080,979	352,690,914	112,483,561	469,851,749
9 Aircraft and parts.....	70	41,616	179,699,179	148,546,515	271,064,498	424,442,713 ¹
10 Railway rolling-stock.....	30	27,909	104,168,142	241,830,731	140,475,504	386,722,053 ¹
11 Miscellaneous electrical appa- ratus and supplies.....	172	27,610	106,926,788	183,773,182	190,814,721	381,078,923
12 Machinery, industrial.....	360	27,691	109,192,218	153,043,170	210,725,054	363,000,234
13 Miscellaneous food preparations.....	308	10,003	32,561,621	227,639,112	106,615,482	336,291,786
14 Bread and other bakery prod- ucts.....	2,635	35,443	99,777,843	155,755,549	163,882,067	331,131,927
15 Rubber goods, including foot- wear.....	88	22,178	83,189,580	144,246,768	176,456,204	326,091,308
16 Motor vehicle parts.....	205	20,426	82,943,875	164,311,970	144,243,266	315,395,590
17 Printing and publishing.....	773	30,930	122,602,862	88,247,543	223,553,273	314,344,145
18 Sheet metal products.....	432	19,733	77,109,470	167,831,957	136,675,531	309,498,908
19 Furniture.....	1,962	32,681	97,887,349	151,310,343	152,955,681	307,340,601
20 Machinery, heavy electrical....	78	24,234	103,078,674	114,474,507	182,442,834	301,241,082
21 Castings, iron.....	201	16,777	67,255,724	142,250,365	133,477,902	276,048,007
22 Clothing, men's factory.....	559	32,024	77,124,486	152,560,645	121,064,345	272,425,612
23 Fruit and vegetable preparations	430	17,742	43,711,739	173,507,528	105,081,914	265,469,913
24 Boxes and bags, paper.....	220	15,941	52,625,854	154,308,367	97,119,253	253,497,145
25 Clothing, women's factory.....	670	26,192	66,393,053	132,232,239	113,136,062	245,394,628
26 Printing and bookbinding.....	1,892	26,952	92,439,189	91,880,379	151,527,441	244,690,618
27 Bridge and structural steel.....	68	15,974	70,956,268	117,061,824	112,319,961	231,450,499 ¹
28 Breweries.....	67	8,413	37,003,146	59,229,700	169,990,773	231,116,361
29 Sash, door and planing mills....	1,781	18,869	53,235,719	137,792,419	82,654,934	224,579,465
30 Miscellaneous chemical prod- ucts, n.e.s.	267	12,446	50,232,825	112,633,167	98,222,608	220,155,372
31 Feeds, stock and poultry, pre- pared.....	855	6,513	18,197,946	167,659,149	47,545,619	219,238,671
32 Cotton yarn and cloth.....	51	21,131	57,252,095	129,868,827	86,853,081	218,903,437
33 Telecommunication equipment.....	127	18,503	68,088,842	105,999,742	111,127,430	217,726,717
34 Acids, alkalies and salts.....	54	9,981	46,965,641	95,237,538	104,278,255	215,834,187
35 Flour mills.....	73	4,417	15,214,225	168,634,527	34,189,050	204,376,285
36 Tobacco, cigars and cigarettes....	33	8,372	29,349,732	100,293,925	82,037,358	182,794,564
37 Brass and copper products.....	160	8,825	34,803,463	111,347,089	67,852,993	182,396,315
38 Shipbuilding.....	68	18,417	71,166,172	63,941,511	101,093,592	167,158,789 ¹
39 Synthetic textiles.....	44	15,251	51,033,746	79,135,506	85,273,644	163,809,960
40 Concrete products.....	649	10,369	36,925,763	79,467,786	77,917,728	162,897,684
Totals, Leading Industries.	23,402	908,700	3,371,490,641	8,902,250,076	6,882,644,270	16,150,973,201
Totals, All Industries.....	37,875	1,359,061	4,819,627,999	11,900,751,703	9,822,084,726	22,183,594,311

¹ Reported on a production basis.

Section 3.—Principal Factors in Manufacturing Production

In addition to the factors dealt with in the following Subsections 1 and 2, one of the principle indicators of growth in manufacturing production is the amount paid as salaries and wages to various groups of employees within these industries. Detailed information on employment, earnings and hours is given in the Labour Chapter of this volume, Section 3.

Subsection 1.—Capital and Repair Expenditure

The present series of statistics covering expenditure on fixed capital and repairs by manufacturing industries commences with the year 1944.

Capital expenditures by manufacturers in 1957 totalled \$519,900,000 for construction and \$959,000,000 for machinery and equipment; in addition, \$613,900,000 was spent for repairs. Of the total capital expenditures amounting to \$1,478,900,000, 18.0 p.c. was reported by paper products, 12.1 p.c. by iron and steel products, 10.1 p.c. by chemicals and allied products, 9.8 p.c. by non-ferrous metal products, 8.8 p.c. by products of petroleum and coal, 7.9 p.c. by foods and beverages, 5.3 p.c. by non-metallic mineral products, 4.2 p.c. by transportation equipment, etc.

Of the groups reporting capital expenditures of \$50,000,000 or more in 1957, seven reported increases and only one—non-metallic mineral products—reported a decrease. Wood products, which was in the \$50,000,000-or-over group in 1956, also reported a decline which took it out of that category in 1957. Of the groups reporting increases, products of petroleum and coal with \$37,000,000 led the list, followed by non-ferrous metal products with \$27,000,000, iron and steel products with \$17,100,000, paper products with \$8,900,000, foods and beverages \$8,000,000, chemicals and allied products \$4,800,000 and transportation equipment \$2,100,000. Besides the non-metallic mineral products group which declined \$41,400,000 and wood products which reported a drop of \$11,800,000, the leather products group, down by \$700,000, was the only other group to report a decline in 1957.

Capital expenditures in 1957 increased by \$85,100,000 over 1956 compared with a record increase of \$447,500,000 in 1956 over the previous year. The average annual expenditure on capital assets, amounting to \$1,054,000,000 for the years 1951-57, reflects the expansion and modernization of the manufacturing industries of Canada during that period.

18.—Capital and Repair Expenditures by the Manufacturing Industries, 1948-57, and by Province and Industrial Group, 1957

Year	Capital Expenditure			Repair Expenditure		
	Con- struction	Mach- inery and Equip- ment	Total	Con- struction	Mach- inery and Equip- ment	Total
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
1948.....	184.8	394.2	579.0	78.9	253.9	332.8
1949.....	156.6	379.2	535.8	66.7	267.2	333.9
1950.....	135.4	367.1	502.5	67.6	279.0	346.6
1951.....	267.6	525.0	792.6	85.0	337.0	422.0
1952.....	343.6	629.0	972.6	95.2	363.5	458.7
1953.....	324.5	644.5	969.0	94.6	385.5	480.1
1954.....	287.6	534.5	822.1	97.6	390.9	488.5
1955.....	344.5	601.8	946.3	100.6	413.0	513.6
1956.....	487.7	906.1	1,393.8	112.2	465.6	577.8

18.—Capital and Repair Expenditures by the Manufacturing Industries, 1948-57, and by Province and Industrial Group, 1957—concluded

Year, Province and Industrial Group	Capital Expenditure			Repair Expenditure		
	Con- struction	Machin- ery and Equip- ment	Total	Con- struction	Machin- ery and Equip- ment	Total
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
1957						
Newfoundland.....	2.0	10.9	12.9	1.7	6.3	8.0
Prince Edward Island.....	—	0.2	0.2	0.1	0.1	0.2
Nova Scotia.....	6.8	10.9	17.7	6.5	9.9	16.4
New Brunswick.....	3.5	11.7	15.2	1.3	9.8	11.1
Quebec.....	119.6	256.2	375.8	31.7	131.9	163.6
Ontario.....	219.5	456.4	675.9	50.2	261.8	312.0
Manitoba.....	18.6	11.8	30.4	4.2	9.4	13.6
Saskatchewan.....	5.2	9.4	14.6	2.8	2.4	5.2
Alberta.....	27.8	33.8	61.6	7.6	13.5	21.1
British Columbia.....	116.9	157.7	274.6	9.3	53.4	62.7
Canada, 1957.....	519.3	959.0	1,478.3	115.4	498.5	613.9
Foods and beverages.....	36.3	80.8	117.1	13.0	51.0	64.0
Tobacco and tobacco products.....	1.9	7.2	9.1	1.1	2.7	3.8
Rubber products.....	6.1	10.9	17.0	1.1	7.8	8.9
Leather products.....	1.3	2.3	3.6	0.7	2.3	3.0
Textiles.....	7.9	31.4	39.3	3.1	18.1	21.2
Clothing ¹	1.2	9.6	10.8	1.1	4.4	5.5
Wood products.....	10.3	28.7	39.0	6.5	27.6	34.1
Paper products.....	66.3	200.0	266.3	8.1	90.1	98.2
Printing, publishing and allied industries.....	17.3	22.8	40.1	2.0	5.7	7.7
Iron and steel products.....	54.5	125.1	179.6	16.6	100.1	116.7
Transportation equipment.....	18.1	44.3	62.4	11.6	33.8	45.4
Non-ferrous metal products.....	69.9	74.5	144.4	8.5	54.0	62.5
Electrical apparatus and supplies.....	13.8	30.5	44.3	3.3	15.4	18.7
Non-metallic mineral products.....	29.4	49.2	78.6	3.1	35.9	39.0
Products of petroleum and coal.....	113.4	16.6	130.0	26.0	5.9	31.9
Chemicals and allied products.....	65.6	84.1	149.7	8.1	39.6	47.7
Miscellaneous industries.....	6.6	8.5	15.1	1.5	4.1	5.6
Capital items charged to operating expense.....	—	132.5	132.5	—	—	—

¹ Includes knitting mills.

Subsection 2.—Size of Manufacturing Establishments

The size of a manufacturing establishment is generally measured either by the value of factory shipments or by the number of employees but each of these methods has its limitations. The former measure has to be adjusted for changes in the price level and, as between industries, it makes those in which the cost of raw materials is relatively high appear to operate on a larger scale. The latter takes no account of the differences in capital equipment at different times or in various industries and obviously the increased use of machinery may lead to an increase in production concurrently with a decrease in number of employees.

Size as Measured by Selling Value of Factory Shipments.—In 1946, after heavy wartime production had ceased and reconversion had barely begun, there were 1,442 manufacturing establishments, each with an output of \$1,000,000 or over. Their combined production was valued at \$5,377,870,217 and accounted for 66.9 p.c. of the total for all manufacturing plants. By 1949, the number of factories in that category had increased to 1,926 and the proportion of their production to the total was 74.4 p.c. As a result of the tremendous industrial expansion and the increase in prices of the 1950's, the number of plants with shipments valued at over \$1,000,000 increased to 3,053 in 1957. These plants contributed 81 p.c. of the total output in that year.

19.—Manufacturing Establishments and Total and Average Production classified by Value of Product Group, 1946, 1949, 1955 and 1957

Gross Value Group ¹	Estab- lish- ments	Total Production	Average per Estab- lishment	Estab- lish- ments	Total Production	Average per Estab- lishment
	1946			1949		
	No.	\$	\$	No.	\$	\$
Under \$25,000.....	14,478	138,504,608	9,566	16,176	145,907,685	9,020
\$ 25,000 but under \$ 50,000.....	4,524	162,355,572	35,888	4,884	174,899,010	35,810
50,000 " 100,000.....	3,958	282,976,378	71,495	4,487	320,878,071	71,513
100,000 " 200,000.....	3,060	433,302,078	141,602	3,630	514,921,581	141,852
200,000 " 500,000.....	2,620	824,481,340	314,687	3,195	1,000,486,294	313,141
500,000 " 1,000,000.....	1,167	816,202,278	699,402	1,494	1,041,235,578	699,945
1,000,000 " 5,000,000.....	1,183	2,376,006,853	2,008,459	1,505	3,164,936,378	2,102,948
5,000,000 or over.....	259	3,001,863,364	11,590,206	421	6,116,328,703	14,528,097
Totals and Averages.....	31,249	8,035,692,471	257,150	35,792	12,479,593,300	348,670
	1955 ²			1957 ²		
	No.	\$	\$	No.	\$	\$
Under \$25,000.....	15,327	143,480,957	9,362	13,779	132,484,661	9,615
\$ 25,000 but under \$ 50,000.....	5,112	184,847,245	36,159	5,102	184,103,978	36,085
50,000 " 100,000.....	4,781	343,512,650	50,933	4,985	387,826,780	71,781
100,000 " 200,000.....	4,250	608,414,152	143,156	4,404	626,666,027	142,295
200,000 " 500,000.....	3,970	1,261,916,569	317,863	4,347	1,375,174,587	316,350
500,000 " 1,000,000.....	2,013	1,411,584,589	701,234	2,205	1,555,090,715	705,257
1,000,000 " 5,000,000.....	2,101	4,364,363,277	2,077,279	2,355	4,953,233,872	2,121,299
5,000,000 or over.....	628	11,195,814,372	17,827,730	718	12,999,013,691	18,104,476
Totals and Averages.....	38,182	19,513,933,811	511,077	37,875	22,183,594,311	585,705

¹ In 1952 gross value of products was replaced by selling value of factory shipments.

² Includes Newfoundland.

Size as Measured by Number of Employees.—In 1946 the 311 establishments employing 500 or more persons accounted for 32.3 p.c. of the total number of employees engaged in manufacturing. In 1957 there were 413 plants with more than 500 employees, 66 of them with over 1,500. The 413 plants employed 36.7 p.c. of the total workers in all manufacturing establishments.

20.—Establishments and Employees in Manufactures classified by Number of Employees per Establishment, 1946, 1949, 1955 and 1957

Employee Group	Estab- lishments	Employees	Average per Estab- lishment	Estab- lishments	Employees	Average per Estab- lishment
	1946			1949		
	No.	No.	No.	No.	No.	No.
Under 5 employees.....	13,810	32,664	2.4	16,647	34,865	2.1
5 to 14 ".....	8,190	67,530	8.2	9,133	75,482	8.3
15 to 49 ".....	5,488	146,939	26.7	5,967	159,012	26.7
50 " 99 ".....	1,759	122,919	69.8	1,905	132,069	69.3
100 " 199 ".....	1,032	144,240	139.7	1,114	156,084	140.1
200 " 499 ".....	659	202,114	306.7	694	213,130	307.1
500 " 999 ".....	311	341,750	1,098.9	332	391,455	1,179.1
1,000 or over.....	—	—	—	—	9,110	—
Head offices ¹	—	—	—	—	—	—
Totals and Averages.....	31,249	1,058,156	33.9	35,792	1,171,207	32.7

¹ Includes only those head offices not located at a plant.

20.—Establishments and Employees in Manufactures classified by Number of Employees per Establishment, 1946, 1949, 1955 and 1957—concluded

Employee Group	Estab- lishments	Employees	Average per Estab- lishment	Estab- lishments	Employees	Average per Estab- lishment
	1955 ²			1957 ²		
	No.	No.	No.	No.	No.	No.
Under 5 employees.....	16,762	36,340	2.2	16,044	35,020	2.2
5 to 14 ".....	9,864	81,471	8.3	9,983	83,030	8.3
15 " 49 ".....	6,340	169,575	26.7	6,485	174,415	26.9
50 " 99 ".....	2,082	144,411	69.4	2,138	148,329	69.4
100 " 199 ".....	1,175	163,091	138.8	1,213	168,810	139.2
200 " 499 ".....	739	227,667	308.1	771	233,636	303.0
500 " 999 ".....	243	167,720	690.2	280	194,300	693.9
1,000 " 1,499 ".....	76	91,840	1,208.4	67	82,011	1,224.0
1,500 or over.....	61	200,413	3,285.5	66	221,885	3,361.9
Head offices ¹	—	15,933	—	—	17,625	—
Not classifiable.....	840	—	—	828	—	—
Totals and Averages.....	38,182	1,298,461	34.0	37,875	1,359,061	35.9

¹ Includes only those head offices not located at a plant.² Includes Newfoundland.

21.—Manufacturing Establishments classified by Number of Employees and by Province, 1957

Province or Territory	Employees—					
	Up to 499	500 to 799	800 to 999	1,000 to 1,499	1,500 or Over	Total
	No.	No.	No.	No.	No.	No.
Newfoundland.....	914	—	—	1	1	916
Prince Edward Island.....	193	—	—	—	—	193
Nova Scotia.....	1,349	1	3	1	2	1,356
New Brunswick.....	974	4	1	2	—	981
Quebec.....	12,105	63	32	27	23	12,250
Ontario.....	13,378	108	33	27	34	13,580
Manitoba.....	1,580	5	1	2	2	1,590
Saskatchewan.....	844	—	—	—	—	844
Alberta.....	1,881	8	3	1	—	1,893
British Columbia.....	4,222	12	6	6	4	4,250
Yukon and Northwest Territories.....	22	—	—	—	—	22
Canada.....	37,463	201	79	67	66	37,875

Size of Establishments in Leading Industries.—Table 22 shows the degree of concentration in some of the leading industries of Canada. Concentration is extremely marked in the motor vehicle, non-ferrous metal smelting and refining, aircraft and parts, railway rolling-stock, pulp and paper, rubber goods, cotton yarn and cloth, primary iron and steel, and heavy electrical machinery industries. On the other hand, the degree of concentration is low in such industries as factory clothing, furniture, butter and cheese, miscellaneous food preparations, fruit and vegetable preparations, bread and other bakery products, and sawmills.

**22.—Percentage Importance of Establishments, each Employing 200 or more Persons,
in the 25 Leading Industries, 1957**

Industry	Number of Estab- lishments Employing 200 or more Persons	Percentage of Total Estab- lishments in the Industry	Percentage of Total Shipments in the Industry
1 Pulp and paper.....	80	62.5	94.8
2 Petroleum products.....	17	26.6	81.9
3 Non-ferrous metal smelting and refining.....	19	82.6	98.6
4 Motor vehicles.....	11	68.8	99.5
5 Slaughtering and meat packing.....	31	19.4	76.3
6 Primary iron and steel.....	16	31.4	91.4
7 Sawmills.....	22	0.4	26.2
8 Butter and cheese.....	20	1.5	23.1
9 Aircraft and parts.....	21	30.0	94.4
10 Railway rolling-stock.....	21	70.0	97.8
11 Miscellaneous electrical apparatus and supplies.....	26	15.1	78.3
12 Machinery, industrial.....	33	9.2	57.2
13 Miscellaneous food preparations.....	6	1.9	22.5
14 Bread and other bakery products.....	28	1.1	34.5
15 Rubber goods, including footwear.....	25	28.4	91.4
16 Motor vehicle parts.....	21	10.2	69.8
17 Printing and publishing.....	31	4.0	68.8
18 Sheet metal products.....	23	5.3	51.1
19 Furniture.....	17	0.9	16.7
20 Machinery, heavy electrical.....	22	28.2	86.1
21 Castings, iron.....	23	11.4	75.6
22 Clothing, men's factory.....	33	5.9	36.5
23 Fruit and vegetable preparations.....	8	1.9	35.4
24 Boxes and bags, paper.....	16	7.3	38.9
25 Clothing, women's factory.....	7	1.0	5.5

PART III.—PROVINCIAL AND LOCAL DISTRIBUTION OF MANUFACTURING PRODUCTION

Section 1.—Provincial Distribution of Manufacturing Production

This Section shows the distribution and concentration of the manufacturing industries in each province followed by a general analysis of the leading industries in the individual provinces. Ontario and Quebec are by far the most important manufacturing provinces of Canada. Their combined production in 1957 amounted to \$17,758,187,739 or 80 p.c. of the total factory shipments of manufactured products. The water power and other varied resources of the two provinces and their nearness to the larger markets of Canada and the United States have contributed to this progress.

Table 1 shows the outstanding predominance of Ontario and Quebec in each industrial group. Quebec leads in the manufacture of tobacco and tobacco products, textiles and clothing and paper products. In each of the other groups Ontario has the greater production of the two provinces. In the production of wood products British Columbia, with 39 p.c. of the total, holds the dominant position, outranking both Ontario and Quebec which account for 26 and 23 p.c., respectively, of the total. In each of the other groups Ontario and Quebec lead by a wide margin.

1.—Summary Statistics of Manufactures of each Province classified by Industrial Group, 1957

Province and Industrial Group	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Newfoundland						
Foods and beverages.....	75	3,566	7,211,670	17,454,344	14,969,611	33,450,992
Leather products.....	5	118	242,040	523,401	120,904	774,807
Textiles.....	1	1	1	1	1	1
Knitting mills.....	1	1	1	1	1	1
Clothing.....	3	174	245,973	248,018	252,547	534,125
Wood products.....	751	1,583	1,819,488	3,586,804	2,967,521	6,899,265
Paper products ²	2	3,419	18,425,743	27,629,298	30,607,894	63,302,987
Printing, publishing and allied in- dustries.....	41	451	1,281,360	734,375	2,206,009	3,012,842
Iron and steel products.....	10	264	823,845	907,057	1,325,640	2,303,392
Transportation equipment.....	5	306	968,806	404,814	952,627	1,388,950
Electrical apparatus and supplies.....	1	1	1	1	1	1
Non-metallic mineral products.....	11	278	1,005,139	969,922	1,660,396	2,996,815
Products of petroleum and coal.....	1	1	1	1	1	1
Chemicals and allied products.....	5	77	216,281	754,171	735,198	1,510,857
Miscellaneous industries.....	8	237	543,370	782,918	745,445	1,538,763
Totals, Newfoundland.....	916	10,473	32,783,715	53,995,122	56,543,792	117,713,795
Prince Edward Island						
Foods and beverages.....	94	1,081	2,113,899	15,088,826	4,148,088	19,317,135
Tobacco and tobacco products.....	2	2	2	2	2	2
Textiles.....	4	82	161,000	1,054,061	507,547	1,519,135
Wood products.....	70	213	319,194	500,654	560,421	1,092,682
Paper products.....	2	2	2	2	2	2
Printing, publishing and allied in- dustries.....	11	167	383,773	175,336	609,493	803,535
Iron and steel products.....	4	29	71,800	62,062	77,704	151,710
Transportation equipment.....	2	2	2	2	2	2
Non-metallic mineral products.....	3	13	29,068	24,552	57,072	85,500
Chemicals and allied products.....	2	2	2	2	2	2
All other groups.....	7	78	200,088	1,409,758	619,182	1,983,156
Totals, Prince Edward Island...	193	1,663	3,278,822	18,315,249	6,579,507	21,952,853
Nova Scotia						
Foods and beverages.....	350	8,668	18,606,304	66,954,313	36,928,631	105,588,720
Leather products.....	3	73	168,796	210,018	269,474	482,072
Textiles.....	12	491	1,193,200	2,634,517	3,153,653	5,868,352
Knitting mills.....	5	957	1,850,367	3,566,849	3,095,934	6,769,846
Clothing.....	9	388	613,957	1,324,869	924,051	2,298,261
Wood products.....	659	3,857	6,836,685	17,207,387	12,400,353	30,139,290
Paper products.....	7	1,530	5,374,034	10,457,336	13,442,987	25,495,582
Printing, publishing and allied in- dustries.....	140	1,463	4,173,328	2,867,981	7,698,167	10,720,650
Iron and steel products.....	54	6,842	26,011,070	45,591,724	33,266,720	81,543,665
Transportation equipment.....	57	5,354	18,322,480	26,622,365	26,117,593	53,406,233
Non-ferrous metal products.....	1	1	1	1	1	1
Electrical apparatus and supplies.....	1	1	1	1	1	1
Non-metallic mineral products.....	26	493	1,434,608	1,235,068	3,346,074	5,240,099
Products of petroleum and coal.....	1	1	1	1	1	1
Chemicals and allied products.....	15	292	911,658	3,011,384	2,664,940	5,567,194
Miscellaneous industries.....	19	1,117	5,138,128	56,602,934	32,374,347	94,179,081
Totals, Nova Scotia.....	1,356	31,530	90,634,615	238,286,745	175,682,924	427,299,045
New Brunswick						
Foods and beverages.....	314	6,498	15,059,045	83,926,508	36,810,000	123,163,725
Leather products.....	7	311	631,733	1,105,660	1,057,992	2,192,850
Textiles.....	14	372	852,804	1,315,043	986,717	2,117,250
Knitting mills.....	1	1	1	1	1	1
Clothing.....	5	169	238,501	267,367	308,581	597,088

For footnotes, see end of table, p. 695.

1.—Summary Statistics of Manufactures of each Province classified by Industrial Group, 1957—continued

Province and Industrial Group	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
New Brunswick—concluded						
Wood products.....	455	3,461	6,951,396	18,437,390	11,973,000	30,898,055
Paper products.....	18	4,334	18,909,169	46,209,736	43,537,509	98,658,959
Printing, publishing and allied in- dustries.....	71	947	2,682,414	1,793,775	4,397,235	6,358,473
Iron and steel products.....	32	1,278	3,617,329	5,815,392	6,835,245	12,666,504
Transportation equipment.....	10	2,085	6,835,812	8,765,805	7,830,844	16,916,131
Non-ferrous metal products.....	1	1	1	1	1	1
Non-metallic mineral products.....	27	508	1,580,887	1,596,153	4,031,329	6,748,414
Products of petroleum and coal.....	1	1	1	1	1	1
Chemicals and allied products.....	9	150	473,437	3,070,360	1,307,214	4,344,891
Miscellaneous industries.....	19	872	2,652,780	2,438,674	4,471,794	7,133,161
Totals, New Brunswick.....	981	20,985	60,485,307	174,741,863	123,547,460	311,795,501
Quebec						
Foods and beverages.....	2,726	48,593	143,391,389	728,804,896	366,047,426	1,107,984,474
Tobacco and tobacco products.....	29	8,018	27,910,568	94,677,829	75,027,590	170,223,998
Rubber products.....	34	6,430	20,446,898	26,093,702	31,723,275	59,707,499
Leather products.....	332	16,253	37,113,063	55,116,647	54,544,008	109,959,712
Textiles.....	417	38,556	109,938,151	221,511,275	174,141,468	400,213,353
Knitting mills.....	166	10,367	23,773,785	42,928,962	41,432,945	83,858,655
Clothing.....	1,590	56,838	132,869,375	258,620,518	216,420,542	475,051,384
Wood products.....	3,097	32,941	81,105,842	169,638,429	133,637,145	307,792,257
Paper products.....	201	36,724	157,152,436	335,153,791	345,192,627	728,475,228
Printing, publishing and allied in- dustries.....	1,267	20,638	73,507,451	71,263,549	132,857,961	205,028,067
Iron and steel products.....	721	45,997	175,113,736	275,261,617	314,719,883	593,096,208
Transportation equipment.....	119	37,906	148,144,279	201,426,702	210,248,314	416,441,357
Non-ferrous metal products.....	192	17,673	72,667,846	366,338,500	184,338,670	580,685,327
Electrical apparatus and supplies.....	99	24,106	94,188,512	130,502,427	144,636,167	276,076,828
Non-metallic mineral products.....	373	11,985	43,285,850	63,289,682	95,096,144	173,936,404
Products of petroleum and coal.....	18	3,527	18,410,567	311,760,721	188,153,765	521,341,817
Chemicals and allied products.....	372	21,835	87,168,720	171,520,780	183,014,716	365,990,512
Miscellaneous industries.....	497	10,996	31,639,868	46,998,772	56,664,962	103,821,976
Totals, Quebec.....	12,250	449,333	1,477,828,336	3,570,908,799	2,947,897,608	6,679,595,056
Ontario						
Foods and beverages.....	3,206	79,617	257,622,894	1,060,346,305	653,637,813	1,719,892,062
Tobacco and tobacco products.....	17	1,873	5,381,686	66,017,132	13,217,380	79,452,268
Rubber products.....	46	15,679	62,508,239	117,970,608	144,355,550	265,798,148
Leather products.....	223	13,074	36,503,898	59,652,669	55,713,712	115,169,113
Textiles.....	380	27,145	84,134,348	169,779,230	143,565,982	312,983,411
Knitting mills.....	123	9,792	23,372,209	40,447,039	37,317,071	77,552,436
Clothing.....	695	24,711	63,948,267	98,366,838	102,106,861	199,876,832
Wood products.....	2,384	35,165	104,138,857	175,790,936	162,976,014	343,907,186
Paper products.....	265	36,423	151,455,977	344,831,558	321,715,245	695,515,396
Printing, publishing and allied in- dustries.....	1,878	37,276	145,148,994	132,153,843	249,434,610	383,786,215
Iron and steel products.....	1,555	123,601	518,597,587	909,064,544	982,213,763	1,933,767,733
Transportation equipment.....	263	82,127	350,827,518	996,500,393	624,420,336	1,638,518,519
Non-ferrous metal products.....	309	27,760	114,106,127	508,557,666	339,577,559	873,320,832
Electrical apparatus and supplies.....	312	54,622	216,733,886	343,522,935	405,419,816	759,921,341
Non-metallic mineral products.....	547	20,088	78,510,319	105,694,829	179,576,217	310,658,288
Products of petroleum and coal.....	33	7,396	37,586,061	277,791,618	145,935,087	441,814,132
Chemicals and allied products.....	554	26,836	111,182,216	329,778,344	352,476,904	702,383,835
Miscellaneous industries.....	790	21,060	68,917,381	91,051,013	134,050,869	224,274,936
Totals, Ontario.....	13,580	644,245	2,430,676,464	5,827,317,500	5,047,710,789	11,078,592,683

For footnotes, see end of table, p. 695.

1.—Summary Statistics of Manufactures of each Province classified by Industrial Group, 1957—continued

Province and Industrial Group	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Manitoba						
Foods and beverages.....	390	9,930	33,144,841	171,240,401	76,757,552	250,482,379
Rubber products.....	3	8	15,681	41,670	19,528	71,113
Leather products.....	21	739	1,743,332	3,635,339	2,586,538	6,052,925
Textiles.....	32	536	1,334,749	6,117,448	2,292,840	8,389,840
Knitting mills.....	4	91	171,260	434,018	442,094	853,862
Clothing.....	162	5,992	13,784,025	27,136,383	20,964,567	47,725,534
Wood products.....	327	3,186	8,617,879	16,176,207	13,536,570	30,076,152
Paper products.....	25	1,559	5,708,345	17,349,120	16,477,807	35,221,527
Printing, publishing and allied in- dustries.....	296	3,909	12,723,928	10,724,102	22,635,581	33,535,974
Iron and steel products.....	133	5,404	19,796,035	35,125,767	30,043,379	66,553,231
Transportation equipment.....	26	7,006	24,815,262	25,304,378	28,570,975	54,417,262
Non-ferrous metal products.....	17	484	1,886,547	8,088,301	6,313,357	15,052,447
Electrical apparatus and supplies.....	20	1,149	3,727,272	7,260,761	7,892,399	14,921,194
Non-metallic mineral products.....	41	1,391	4,457,041	6,963,541	11,244,425	20,799,126
Products of petroleum and coal.....	6	988	3,952,555	32,203,109	21,884,518	56,453,688
Chemicals and allied products.....	37	749	2,257,544	8,362,710	7,447,957	16,163,547
Miscellaneous industries.....	60	763	2,063,930	3,635,959	4,052,370	7,760,435
Totals, Manitoba.....	1,590	43,884	140,200,256	379,799,214	273,162,757	664,529,736
Saskatchewan						
Foods and beverages.....	239	5,325	17,646,734	94,112,923	42,906,095	133,105,689
Textiles.....	8	78	170,503	805,844	324,117	1,133,586
Clothing.....	9	256	622,945	1,136,581	1,362,265	2,391,805
Wood products.....	260	1,294	2,963,300	5,238,966	4,815,441	10,261,733
Paper products.....	5	43	118,796	281,875	278,438	552,588
Printing, publishing and allied in- dustries.....	187	1,567	5,002,062	3,361,232	8,236,691	11,726,862
Iron and steel products.....	55	722	2,551,445	4,942,125	3,988,575	8,624,328
Transportation equipment.....	5	16	51,717	30,995	87,728	125,840
Non-ferrous metal products.....	1	1	1	1	1	1
Electrical apparatus and supplies.....	1	1	1	1	1	1
Non-metallic mineral products.....	35	564	1,923,261	2,097,522	5,647,988	8,692,259
Products of petroleum and coal.....	12	1,274	6,142,133	57,801,721	29,060,522	90,339,371
Chemicals and allied products.....	9	223	903,832	2,849,887	1,386,010	4,159,342
Miscellaneous industries.....	20	650	2,778,621	16,447,066	11,504,937	30,001,709
Totals, Saskatchewan.....	844	12,012	40,875,349	189,106,737	109,598,807	306,115,112
Alberta						
Foods and beverages.....	446	11,733	38,624,106	223,525,338	84,538,601	310,987,766
Rubber products.....	1	1	1	1	1	1
Leather products.....	12	62	153,075	274,016	163,827	351,567
Textiles.....	18	438	1,473,795	3,872,031	2,162,836	6,187,576
Knitting mills.....	5	48	101,941	112,646	149,155	258,467
Clothing.....	26	1,004	2,738,026	5,429,816	4,287,917	9,406,224
Wood products.....	693	5,334	13,836,827	29,418,927	24,789,958	55,181,629
Paper products.....	16	1,154	4,870,162	10,882,569	5,558,912	17,454,025
Printing, publishing and allied in- dustries.....	270	2,761	9,117,562	7,596,135	17,687,759	25,472,895
Iron and steel products.....	172	4,587	17,654,333	37,089,940	31,369,783	68,253,769
Transportation equipment.....	28	3,666	13,507,795	12,464,435	15,669,893	28,422,049
Non-ferrous metal products.....	13	771	3,548,913	9,176,062	10,943,540	20,772,692
Electrical apparatus and supplies.....	8	178	633,037	2,834,788	1,026,016	3,868,810
Non-metallic mineral products.....	73	2,752	9,803,621	15,813,007	24,694,825	42,493,158
Products of petroleum and coal.....	25	2,232	10,969,043	83,582,424	59,828,563	147,672,293
Chemicals and allied products.....	36	1,940	8,495,390	17,229,543	26,032,779	42,955,847
Miscellaneous industries.....	52	429	1,549,812	1,833,363	2,832,726	4,742,745
Totals, Alberta.....	1,893	39,089	137,077,438	461,134,040	312,037,090	784,480,512

For footnotes, see end of table.

1.—Summary Statistics of Manufactures of each Province classified by Industrial Group, 1957—concluded

Province or Territory and Industrial Group	Estab-lish-ments	Em-ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
British Columbia						
Foods and beverages.....	691	17,143	56,537,411	242,839,280	120,509,394	362,729,234
Tobacco and tobacco products.....	1	1	1	1	1	1
Rubber products.....	4	57	212,154	138,835	345,823	500,163
Leather products.....	21	464	1,212,546	2,011,791	1,682,625	3,806,055
Textiles.....	42	728	2,095,451	4,928,275	3,481,895	8,475,423
Knitting mills.....	5	288	720,215	1,100,013	1,455,760	2,442,159
Clothing.....	61	1,582	8,897,983	5,875,942	5,986,786	11,748,224
Wood products.....	2,089	39,751	141,931,745	293,842,365	217,895,911	518,440,933
Paper products.....	42	9,093	41,263,433	90,571,866	100,850,562	200,990,968
Printing, publishing and allied in- dustries.....	421	5,369	20,381,322	14,341,382	35,915,363	50,681,031
Iron and steel products.....	336	9,826	42,839,789	73,041,284	72,480,675	145,139,238
Transportation equipment.....	108	6,149	27,925,267	16,676,021	42,089,543	59,427,303
Non-ferrous metal products.....	55	6,905	32,216,442	106,772,194	49,052,917	163,321,860
Electrical apparatus and supplies.....	42	1,043	4,082,948	11,656,579	8,204,799	19,405,814
Non-metallic mineral products.....	95	2,043	8,283,391	12,297,638	15,266,797	30,514,674
Products of petroleum and coal.....	7	1,481	7,134,163	78,603,156	56,884,641	139,719,297
Chemicals and allied products.....	87	2,562	10,290,338	27,312,311	29,694,150	58,097,132
Miscellaneous industries.....	134	1,142	4,105,334	3,510,191	6,116,660	9,859,242
Totals, British Columbia.....	4,250	105,631	405,129,932	985,519,123	767,914,301	1,785,298,750
Yukon and N.W.T.						
Foods and beverages.....	5	23	66,822	84,312	169,738	269,116
Wood products.....	11	54	138,955	238,080	231,136	481,678
All other groups ⁴	6	89	451,988	1,304,919	1,008,817	2,470,474
Totals, Yukon and N.W.T.....	22	166	657,765	1,627,311	1,409,691	3,221,268

¹ Confidential; included in "Miscellaneous industries". ² Publication of these figures was authorized by the firms concerned. ³ Confidential; included under "All other groups". ⁴ Includes printing, publishing and allied industries; iron and steel products; non-ferrous metal products; products of petroleum and coal; and chemicals and allied products.

2.—Concentration of Manufacturing Production in each Province, 1956 and 1957

Province or Territory	1956			1957		
	Number of Establish-ments Employing 500 or more Persons	Percentage of Total Number of Establish-ments in Province	Provincial Percentage of Number of Employees Accounted for by these Establish-ments	Number of Establish-ments Employing 500 or more Persons	Percentage of Total Number of Establish-ments in Province	Provincial Percentage of Number of Employees Accounted for by these Establish-ments
Newfoundland.....	2	0.3	32.1	2	0.2	32.6
Prince Edward Island..	—	—	—	—	—	—
Nova Scotia.....	7	0.5	32.1	7	0.5	32.2
New Brunswick.....	8	0.8	31.1	7	0.7	28.9
Quebec.....	139	1.1	38.0	145	1.2	38.2
Ontario.....	197	1.5	40.8	202	1.5	40.0
Manitoba.....	10	0.7	24.6	10	0.6	23.7
Saskatchewan.....	—	—	—	—	—	—
Alberta.....	9	0.5	18.6	12	0.6	21.5
British Columbia.....	28	0.6	27.5	28	0.7	28.3
Yukon and Northwest Territories.....	—	—	—	—	—	—
Canada.....	490	1.1	36.9	413	1.1	36.7

Subsection 1.—The Manufactures of the Atlantic Provinces

The Atlantic Provinces are of economic importance in a number of fields, such as pulp and paper, fish processing, sawmills and primary iron and steel. In *Newfoundland* manufacturing production is dominated by the forest and fisheries resources. Pulp and paper is by far the most important industry, having shipments valued at \$63,302,987 in 1957, followed by fish processing with shipments of \$16,408,800. These two industries accounted for 68 p.c. of the total production of the province. In *Prince Edward Island* agriculture and fishing resources make butter and cheese, slaughtering and meat packing, and fish processing the leading industries. *Nova Scotia* is renowned for its coal mines, its fisheries and its extensive forests and agricultural lands; it is also favoured with easy access by sea to the high-grade iron ore supply of Newfoundland. On these resources are based the leading manufactures of primary iron and steel, fish processing, shipbuilding, pulp and paper and sawmills. In addition, an important petroleum refinery and industries producing railway rolling-stock, cotton yarn and cloth, and coke and gas add to the diversification of industry in the province. The forests of *New Brunswick* give a leading place to pulp and paper and sawmilling industries in the province. Other important manufacturing and processing activities are based on fish and agricultural resources.

Considering the Atlantic Provinces as an economic unit, pulp and paper was the leading industry in 1957 with factory shipments valued at \$179,676,000. Fish processing and packing with factory shipments valued at \$81,181,000 was in second place. Other leading industries, in order of importance and with shipments exceeding \$30,000,000, were: petroleum products, primary iron and steel, sawmills, sugar refining and railway rolling-stock. These seven industries accounted for 58 p.c. of the total value of factory shipments of the Atlantic Region. Other leading industries with shipments of \$10,000,000 to \$30,000,000 were, in order of importance: butter and cheese, shipbuilding and repairs, bread and other bakery products, slaughtering and meat packing, miscellaneous food preparations, sash, door and planing mills, printing and publishing, coke and gas products, breweries, prepared stock and poultry feeds, carbonated beverages and miscellaneous iron and steel products.

In the Atlantic Provinces the program of industrial development has been more selective than in some of the other provinces. Fish processing, new sawmills, increased pulp-making capacity and the manufacture of non-metallic building materials like cement and gypsum products have accounted for well over half of the industrial growth. There are, however, a few outstanding exceptions. Two sizable defence plants have been established in Nova Scotia, one to repair and overhaul naval aircraft and the other to build and repair radar and related electronic equipment. Considerable development has taken place in Newfoundland. Besides plants for the manufacture of cement and gypsum wallboard and plaster, factories for producing boots and shoes, birch veneer, leather goods, industrial machinery and tanned leather were established, thus broadening the industrial base of the province. With these exceptions, most of the developments in the Atlantic Provinces have been either small and scattered or confined to the modernization and expansion of existing facilities.

Despite the rapid development in the Atlantic Provinces since 1949, manufacturing production in that area did not quite keep pace with the development in the more industrialized provinces of Ontario, Quebec and British Columbia. This is indicated by a slight drop in the Atlantic Provinces' share of the Canadian total from 4.5 p.c. in 1949 to 4.0 p.c. in 1957. In number of persons employed there was an increase of 1.3 p.c. for the Atlantic Provinces as compared with an increase of 15.8 p.c. for Canada as a whole. For salaries and wages paid the increase was 57.2 p.c. as compared with 85.8 p.c. for Canada, and in selling value of factory shipments the increase was 53.3 p.c. for the Atlantic Provinces and 77.6 p.c. for Canada as a whole. Increased employment since 1949 reported by Newfoundland and Nova Scotia was offset by declines in Prince Edward Island and New Brunswick.

The drop in manufacturing employment in 1957 compared with 1956 in the Atlantic Provinces was 1.1 p.c., accompanied by an increase in the selling value of factory shipments of 4.6 p.c. This compared with an increase of 0.4 p.c. in employment and 2.5 p.c. in factory shipments for Canada as a whole. Nova Scotia manufacturers operated at a higher level in 1957 than in 1956 with an increase of 1.9 p.c. in employment and 11.2 p.c. in selling value of factory shipments. Both Newfoundland and New Brunswick reported decreases in employment and value of shipments and Prince Edward Island, although reporting lower employment, had slightly higher shipments.

3.—Statistics of the Leading Industries of the Atlantic Provinces, 1957

Industry	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Newfoundland						
1 Pulp and paper ¹	2	3,419	18,425,743	27,629,298	30,607,894	63,302,987
2 Fish processing.....	36	2,395	4,048,600	9,432,500	6,266,298	16,408,800
3 Breweries.....	3	199	668,689	875,314	2,776,213	3,705,076
4 Bread and other bakery products.....	14	302	800,538	1,818,912	1,479,122	3,480,113
5 Sash, door and planing mills.....	25	270	670,955	1,747,979	1,005,864	2,880,113
6 Sawmills.....	695	1,078	632,069	1,191,537	1,305,538	2,582,405 ²
7 Carbonated beverages.....	10	133	345,624	951,283	1,497,978	2,512,424
8 Printing and publishing.....	6	272	876,278	394,565	1,596,194	2,047,549
9 Biscuits.....	3	178	372,304	590,793	832,153	1,454,484
10 Other leading industries ³	9	860	2,812,148	5,254,160	4,737,829	10,429,208
Totals, Leading Industries ...	803	9,106	29,652,948	49,886,341	52,105,083	108,723,267
Totals, All Industries	916	10,473	32,783,715	53,995,122	56,543,792	117,713,795
Prince Edward Island						
1 Butter and cheese.....	17	174	405,444	4,296,380	861,036	5,069,995
2 Fish processing.....	27	409	478,900	2,854,200	700,507	3,615,700
3 Feeds, stock and poultry, prepared.....	12	56	89,325	711,673	187,787	920,995
4 Fruit and vegetable preparations.....	6	88	104,997	529,258	232,426	817,928
5 Printing and publishing.....	3	154	365,813	159,983	585,250	762,359
6 Milk pasteurizing plants.....	11	41	121,679	354,053	239,308	614,212
7 Sawmills.....	58	107	111,125	277,347	273,641	563,388 ²
8 Other leading industries ³	4	274	874,447	8,235,253	2,292,768	10,391,125
Totals, Leading Industries ...	138	1,303	2,561,700	17,418,147	5,372,723	22,755,702
Totals, All Industries	193	1,663	3,278,822	18,315,249	6,579,507	24,952,853
Nova Scotia						
1 Primary iron and steel.....	3	4,579	18,702,599	33,496,173	19,518,291	55,145,123
2 Fish processing.....	126	4,037	7,861,400	29,773,400	13,549,661	43,901,800
3 Shipbuilding.....	18	2,753	9,723,856	8,721,993	13,860,655	22,988,131 ²
4 Pulp and paper.....	4	1,254	4,742,462	8,426,757	11,836,552	21,851,807
5 Sawmills.....	526	2,416	3,626,608	9,937,770	7,351,307	17,579,418 ²
6 Butter and cheese.....	21	701	1,901,599	7,657,241	3,510,142	11,445,651
7 Bread and other bakery products.....	73	858	2,059,690	4,646,660	3,843,018	8,813,141
8 Sash, door and planing mills.....	60	767	1,832,324	4,723,550	2,665,155	7,506,406
9 Printing and publishing.....	27	847	2,858,529	1,518,504	5,512,714	7,132,900
10 Milk pasteurizing plants.....	29	414	1,248,148	4,090,439	2,020,439	6,359,706
11 Knitted goods, other than hosiery.....	3	858	1,090,512	3,382,328	2,938,724	6,316,220
12 Confectionery.....	6	901	1,412,843	3,301,479	2,231,258	5,528,557
13 Fruit and vegetable preparations.....	17	588	1,042,122	3,699,767	2,029,007	5,383,343
14 Feeds, stock and poultry, prepared.....	16	107	246,774	3,718,263	760,546	4,534,498
15 Carbonated beverages.....	29	269	724,995	1,528,119	2,791,466	4,468,675
16 Miscellaneous food preparations.....	12	215	481,347	2,740,831	1,555,194	4,315,668
17 Machinery, industrial.....	5	403	1,253,635	1,168,912	1,808,618	3,090,796
18 Slaughtering and meat packing.....	4	60	145,836	1,882,149	263,415	2,184,138
19 All other leading industries ³	18	5,113	18,508,444	86,702,697	59,325,505	152,279,530
Totals, Leading Industries ...	996	27,140	80,063,723	221,117,030	157,371,667	390,825,508
Totals, All Industries	1,356	31,530	90,634,615	238,286,745	175,682,924	427,299,045

For footnotes, see end of table, p. 698.

3.—Statistics of the Leading Industries of the Atlantic Provinces, 1957—concluded

Industry	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
New Brunswick	No.	No.	\$	\$	\$	\$
1 Pulp and paper.....	7	4,071	18,245,012	43,732,815	41,885,431	94,521,304
2 Sawmills.....	336	2,390	4,412,561	11,665,522	8,400,536	20,330,734 ¹
3 Fish processing.....	123	2,149	3,246,800	11,020,100	5,977,200	17,255,100
4 Slaughtering and meat packing...	3	384	1,525,337	9,585,635	1,934,150	11,587,358
5 Butter and cheese.....	30	456	1,266,123	7,954,691	3,093,004	11,431,013
6 Miscellaneous food preparations...	13	394	739,782	8,394,946	2,929,442	11,222,778
7 Bread and other bakery products...	59	942	2,172,231	4,966,083	4,641,281	10,027,414
8 Sash, door and planing mills.....	68	679	1,634,146	4,798,568	2,330,225	7,249,720
9 Feeds, stock and poultry, prepared	14	179	483,077	5,430,699	886,532	6,414,740
10 Heating and cooking apparatus...	3	694	1,893,636	2,630,604	3,652,101	6,193,678
11 Printing and publishing.....	19	648	1,931,630	1,029,066	3,317,982	4,423,812
12 Fertilizers.....	3	122	389,650	2,978,133	931,614	3,862,744
13 Carbonated beverages.....	25	216	573,612	1,026,657	1,962,133	3,119,747
14 Boxes and bags, paper.....	10	214	531,100	1,813,726	1,164,798	2,991,088
15 Biscuits.....	3	224	525,644	1,427,463	1,078,827	2,658,913
16 Confectionery.....	5	331	647,907	1,201,622	1,171,596	2,397,056
17 Milk pasteurizing plants.....	21	143	394,281	1,322,570	788,325	2,210,797
18 Footwear, leather.....	3	296	605,040	1,055,742	1,028,291	2,112,613
19 Other leading industries.....	10	3,833	12,665,729	41,712,362	24,948,718	68,949,757
Totals, Leading Industries...	755	18,365	53,883,298	163,747,004	112,112,186	288,860,266
Totals, All Industries.....	981	20,985	60,485,307	174,741,863	123,547,460	311,795,501

¹ Publication of these figures was authorized by the firms concerned.² Reported on a production basis.

* Includes dairy products, n.e.s.; cement, hydraulic; gypsum products; miscellaneous food preparations; paints, varnishes and lacquers; railway rolling-stock; and slaughtering and meat packing. † Includes bags, cotton and jute; fertilizers; and slaughtering and meat packing. ‡ Includes breweries; cotton yarn and cloth; boxes and bags, paper; bridge and structural steel work; wire and wire goods; miscellaneous iron and steel products; aircraft and parts; railway rolling-stock; salt; coke and gas products; and petroleum products. § Includes breweries; brass and copper products; brooms, brushes and mops; cement, hydraulic; railway rolling-stock; shipbuilding; and sugar refining.

Subsection 2.—The Manufactures of Quebec

Quebec has long ranked as the second largest industrial province of Canada. The province experienced a great industrial expansion following World War II, an expansion not confined to existing industrial areas, but spreading to many towns and villages in the accessible areas of the province and into new areas in the hinterland. In 1957 its output of \$6,679,595,056 represented about 30 p.c. of Canada's total selling value of factory shipments.

Several important factors have contributed to the development of industry in Quebec. Its geographic situation is extremely favourable including as it does the great water highway of the St. Lawrence River with its excellent harbour at Montreal 800 miles inland. There is also an extensive road network linking the small rural areas to the larger industrial centres. Other significant factors include abundant natural resources in forests, water power, minerals, agricultural lands and, of even more importance, an industrious and stable population.

Quebec ranks first in available water power resources, having almost 31 p.c. of the total recorded for all Canada. Installations, approaching 9,000,000 hp. at the end of 1957, represented about 45 p.c. of the total for Canada.

The pulp and paper industry, with an output valued at \$596,214,819 in 1957, is Quebec's leading manufacture. The province is a principal world centre for the production of newsprint, having 55 major pulp and paper plants concentrated in the Trois Rivières and Shawinigan Falls districts, as well as along the Saguenay, Ottawa and St. Lawrence Rivers. The production of non-ferrous metals has expanded considerably during the past decade. Aluminum, which until a few years ago was produced only in Quebec, is now also produced in British Columbia but Quebec still maintains its impressive lead in the

output of this metal. The province, in its Montreal area, also boasts the major oil refinery district in the country. Perhaps the most important industrial development in Quebec today is the Ungava iron ore project. The exploitation of the huge ore deposits in this area will expand the industrial base of the province and assure its future development.

Quebec's industries are not as diversified as those of Ontario, although a number produce more than half of the Canadian total. The manufacture of pulp and paper occupies the premier position; by the end of 1957 it accounted for about 9 p.c. of the gross value of Quebec's manufactures and for 42.2 p.c. of the Canadian total for this industry. Other large industries in which Quebec predominates include: tobacco, cigars and cigarettes with 91.2 p.c. of the Canadian total production; women's factory clothing with 70.1 p.c.; cotton yarn and cloth 68.7 p.c.; men's factory clothing 54.2 p.c.; synthetic textiles 50.5 p.c.; miscellaneous electrical apparatus and supplies 48.3 p.c.; railway rolling-stock 43.5 p.c.; shipbuilding and repairs 42.8 p.c.; aircraft and parts 38.1 p.c.; acids, alkalies and salts 37.2 p.c.; petroleum products 36.4 p.c.; brass and copper products 36.4 p.c.; non-ferrous metal smelting and refining 35.8 p.c.; miscellaneous chemical products 35.8 p.c.; and furniture 34.0 p.c. Two medium-sized industries with total Canadian shipments of over \$100,000,000 also predominate in Quebec—leather footwear with 56.3 p.c. of the Canadian total production and medicinal and pharmaceutical preparations with 44.9 p.c.

Despite the slowing down of Canadian production which began in the autumn of 1957, Quebec recorded a small increase of 0.9 p.c. in employment and 0.7 p.c. in the selling value of factory shipments in 1957 compared with the previous record highs reported in 1956. The non-durable goods industries, which contribute about 65 p.c. of the total manufacturing production of the province, reported an increase in 1957 of 4.1 p.c. in the selling value of factory shipments and 0.6 p.c. in the number of persons employed. The durable goods industries on the other hand reported a drop of 4.6 p.c. in shipments but an increase of 1.0 p.c. in number of employees.

4.—Statistics of the Leading Industries of Quebec, 1957

Industry	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
1 Pulp and paper.....	56	27,964	129,124,788	257,397,691	292,451,948	596,214,819
2 Petroleum products.....	8	2,852	15,693,245	300,825,529	180,498,932	500,924,115 ¹
3 Non-ferrous metal smelting and refining.....	10	10,315	44,655,322	285,771,624	143,437,922	457,853,980 ¹
4 Miscellaneous electrical apparatus and supplies.....	42	14,941	58,639,081	81,023,908	100,040,760	184,176,139
5 Slaughtering and meat packing....	44	4,895	17,386,820	153,012,296	28,110,858	182,074,578
6 Clothing, women's factory.....	425	17,487	43,587,855	95,369,384	76,449,469	172,068,261
7 Railway rolling-stock.....	6	12,649	46,155,300	104,999,779	61,159,451	168,244,558 ¹
8 Tobacco, cigars and cigarettes.....	23	7,664	27,109,628	92,328,036	73,885,492	166,675,569
9 Aircraft and parts.....	23	15,816	68,112,308	55,738,069	104,422,789	161,673,194 ¹
10 Cotton yarn and cloth.....	21	13,768	36,968,661	92,234,469	55,501,186	150,304,074
11 Clothing, men's factory.....	315	15,981	38,336,383	87,214,951	60,627,526	147,633,189
12 Butter and cheese.....	572	4,917	13,567,001	111,472,574	25,708,962	139,089,040
13 Machinery, industrial.....	60	9,145	34,751,742	47,362,001	66,726,795	111,807,086
14 Miscellaneous food preparations....	86	2,802	9,151,529	69,770,424	35,127,849	105,510,418
15 Furniture.....	642	11,417	32,023,783	51,867,853	51,948,521	104,617,950
16 Bread and other bakery products....	932	10,418	27,172,519	45,572,498	43,166,386	92,315,783
17 Sawmills.....	1,431	8,615	17,114,084	54,638,552	32,279,461	88,048,397 ¹
18 Synthetic textiles and silk.....	29	10,057	30,759,846	41,953,745	41,448,873	82,785,378
19 Primary iron and steel.....	16	6,621	19,432,890	32,097,677	47,033,842	82,580,076
20 Boxes and bags, paper.....	67	5,158	15,657,362	49,454,727	29,996,668	80,707,675
21 Acids, alkalies and salts.....	17	4,244	20,067,535	36,144,384	38,154,629	80,285,049
22 Footwear, leather.....	148	11,866	27,286,722	40,379,370	39,761,531	80,102,631
23 Miscellaneous chemical products, n.e.s.....	87	6,369	23,362,025	44,203,697	30,926,433	78,830,645
24 Printing and publishing.....	80	7,140	28,376,281	22,165,858	52,947,873	75,562,618
25 Sheet metal products.....	100	4,996	19,270,248	37,249,284	35,111,708	74,248,554
26 Shipbuilding.....	11	7,973	28,944,247	32,585,379	38,159,414	71,582,790 ¹
27 Feeds, stock and poultry, prepared	323	1,995	5,075,725	55,617,087	13,815,798	70,537,818
28 Bridge and structural steel work....	14	5,315	23,260,648	38,271,105	30,104,470	69,028,063 ¹

¹ Reported on a production basis.

4.—Statistics of the Leading Industries of Quebec, 1957—concluded

Industry	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
29 Printing and bookbinding.....	638	7,915	26,211,167	24,921,108	41,521,993	66,977,222
30 Brass and copper products.....	40	2,754	11,061,082	44,177,297	21,119,477	66,387,669
31 Medicinal and pharmaceutical preparations.....	88	4,009	14,647,664	20,677,897	42,082,965	62,921,136
32 Breweries.....	5	2,518	11,036,337	18,349,394	41,452,290	60,646,983
33 Rubber goods, including footwear.	34	6,430	20,446,898	26,093,702	31,723,275	59,707,499
34 Carbonated beverages.....	185	2,739	8,638,820	17,613,469	37,826,761	56,780,719
35 Sash, door and planing mills.....	772	5,638	13,564,092	32,534,677	22,464,129	56,218,896
36 Distilled liquors.....	8	2,286	8,875,017	16,846,196	33,185,357	49,696,723
37 Knitted goods, other than hosiery	81	5,338	11,544,180	29,142,253	21,213,980	49,314,604
38 Wire and wire goods.....	36	3,037	12,030,295	27,131,666	20,564,157	47,998,835
39 Concrete products.....	220	3,371	11,279,238	24,224,348	21,248,222	47,367,268
40 Castings, iron.....	56	3,932	14,943,566	21,464,135	24,292,143	46,166,960
Totals, Leading Industries¹..	7,751	311,347	1,065,321,934	2,719,898,093	2,187,700,295	5,045,666,961
Totals, All Industries.....	12,250	449,383	1,477,823,336	3,570,908,799	2,947,897,608	6,679,595,056

¹ Sugar refining is also a leading industry but statistics are confidential.

Subsection 3.—The Manufactures of Ontario

Ontario is one of the world's major industrial areas. Here the proximity of raw materials, cheap hydro-electric power, and a strategic location in relation to export markets, not only on this Continent but overseas, have been the decisive factors of development. Most of the manufactures and most of the population are located in the southern area of the province, which has the inestimable advantage of bordering on the St. Lawrence-Great Lakes waterway system, giving access westward to the heart of the Continent and eastward to the shipping routes of the world. Furthermore, this same waterway is also the source of most of Ontario's developed hydro-electric power. Many new industrial areas are being created as new industries and branch plants of established industries are increasingly being located in the smaller towns.

Despite the great industrial progress made by other provinces, Ontario continues to maintain its predominance and in 1957 produced about 50 p.c. of the nation's manufactured goods. A vast increase of steel ingot capacity is being made possible by developments at the Steep Rock Iron Mines, northwest of Lake Superior. Huge investments have gone into the construction of plant and equipment for a whole group of new products based on Alberta oil flowing eastward by pipeline. Significant developments are taking place in synthetic rubber, synthetic textiles, and industrial and consumer chemicals. Ontario has continued to gain in such traditional lines as motor vehicles, industrial and farm machinery, and the manufacture of household equipment. The same may be said of other "hard" goods like business and office machinery and electrical apparatus and supplies. Numerous plants making aircraft components and building materials have favoured the Toronto area, while chemical and synthetic textile plants have been rising in the vicinity of Sarnia and along the lower reaches of the St. Lawrence River between Cornwall and Kingston.

Ontario has the greatest diversification of manufacturing production of any province. Certain industries, such as the manufacture of motor vehicles, motor vehicle parts, heavy electrical machinery, agricultural implements, machine tools, starch and glucose, and the processing of raw tobacco are carried on practically in this province alone. Of the forty leading industries in Canada in 1957, a substantial number were dominated by Ontario's share of the total production. These industries, with the percentage which the production of each bears to that of the 1957 Canada totals, were: motor vehicles 98.8 p.c., motor vehicle parts 94.5 p.c., heavy electrical machinery 90.7 p.c., rubber goods 81.5 p.c., primary iron and steel 77.4 p.c., telecommunications equipment 77.0 p.c., iron castings 69.9 p.c., fruit and vegetable preparations 67.6 p.c., sheet metal products 59.1 p.c.,

industrial machinery 58.9 p.c., miscellaneous chemical products 58.2 p.c., printing and bookbinding 57.8 p.c., brass and copper products 57.5 p.c., acids, alkalies and salts 55.3 p.c., aircraft and parts 54.8 p.c., boxes and bags, paper 50.4 p.c., furniture 49.0 p.c., printing and publishing 48.2 p.c., non-ferrous metal smelting and refining 47.7 p.c., synthetic textiles 47.3 p.c., miscellaneous electrical apparatus and supplies 47.0 p.c., and stock and poultry feeds 45.6 p.c.

The medium-sized industries with a total Canadian production of over \$100,000,000 in which Ontario dominated included: agricultural implements with 90.0 p.c., soaps and washing compounds 88.4 p.c., refrigerators, vacuum cleaners, etc., 80.7 p.c., household and office machinery 79.7 p.c., hardware, tools and cutlery 74.0 p.c., heating and cooking apparatus 68.3 p.c., and confectionery 57.7 p.c.

The manufacturing industries of Ontario produced the highest selling value of factory shipments on record in 1957, amounting to \$11,078,592,683, an increase of 4.0 p.c. over the previous year. Accompanying this increase in shipments was an increase of 4.5 p.c. in the number of persons employed, which totalled 644,245 in 1957.

5.—Statistics of the Leading Industries of Ontario, 1957

Industry	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
1 Motor vehicles.....	9	32,193	139,834,409	652,177,614	278,046,608	936,905,003
2 Non-ferrous metal smelting and refining.....	9	11,522	53,326,726	353,812,855	236,746,687	611,038,437 ¹
3 Primary iron and steel.....	18	25,132	126,054,242	253,767,955	267,099,113	545,501,133
4 Pulp and paper.....	42	20,686	96,504,535	197,469,255	217,526,029	442,866,384
5 Petroleum products.....	12	5,420	26,817,229	228,734,451	121,358,945	365,328,298 ¹
6 Slaughtering and meat packing.....	57	9,550	36,620,158	268,389,137	78,162,671	347,660,633
7 Motor vehicle parts.....	116	18,880	77,414,259	166,667,176	134,588,677	298,080,213
8 Machinery, heavy electrical.....	55	22,072	94,896,657	101,678,274	166,797,633	273,347,205
9 Rubber goods, including footwear	46	15,679	62,508,239	117,970,608	144,355,550	265,798,148
10 Aircraft and parts.....	34	21,275	95,178,728	84,901,966	144,601,327	232,469,724 ¹
11 Machinery, industrial.....	215	15,087	60,779,333	90,905,976	121,302,477	213,962,997
12 Castings, iron.....	91	10,723	43,861,382	98,659,528	92,979,064	192,923,207
13 Sheet metal products.....	216	11,700	46,601,595	99,144,950	81,133,755	182,954,665
14 Fruit and vegetable preparations.....	197	11,059	29,317,374	112,475,793	75,034,153	179,577,003
15 Miscellaneous electrical apparatus.....	103	11,915	45,608,106	90,223,151	85,077,748	179,220,234
16 Butter and cheese.....	428	7,760	26,264,395	122,770,046	45,184,742	170,018,041
17 Telecommunication equipment.....	86	12,227	43,480,811	80,190,723	86,314,456	167,696,891
18 Printing and publishing.....	292	14,121	60,275,196	43,956,819	106,249,121	151,440,964
19 Furniture.....	779	15,927	49,963,816	71,934,710	76,868,088	150,473,935
20 Printing and bookbinding.....	807	14,213	50,384,707	55,183,906	86,009,361	141,521,647
21 Miscellaneous food preparations.....	112	4,762	16,366,157	88,838,210	48,505,485	138,451,119
22 Bread and other bakery products.....	851	14,854	43,086,573	64,359,251	69,334,754	138,325,537
23 Railway rolling-stock.....	13	5,959	24,752,076	86,087,681	45,883,513	133,055,001 ¹
24 Miscellaneous chemical products, n.e.s.....	128	5,290	23,977,145	62,164,367	60,342,449	128,105,429
25 Boxes and bags, paper.....	106	8,240	28,497,109	77,149,037	49,861,909	127,787,234
26 Acids, alkalies and salts.....	26	5,023	23,660,540	52,987,617	55,849,725	119,336,880
27 Hardware, tools and cutlery.....	304	10,424	40,200,557	44,718,124	72,541,686	118,170,199
28 Machinery, household, office and store.....	45	6,666	25,601,152	54,195,684	60,291,508	113,761,551
29 Miscellaneous paper goods.....	111	7,051	24,787,895	64,196,373	49,162,134	113,593,106
30 Agricultural implements.....	27	9,249	35,964,156	53,743,532	51,823,318	110,310,407
31 Refrigerators, vacuum cleaners and appliances.....	54	6,808	26,331,418	54,426,787	54,257,925	110,182,701
32 Soaps, washing compounds and cleaning preparations.....	66	2,942	13,174,119	43,855,787	61,785,287	105,075,031
33 Brass and copper products.....	91	5,169	20,572,269	62,464,784	40,520,883	104,826,078
34 Bridge and structural steel work.....	30	6,652	29,890,716	45,061,269	55,010,287	100,991,012 ¹
35 Feeds, stock and poultry, prepared	348	2,933	8,503,809	74,985,943	23,196,006	100,055,251
36 Breweries.....	18	3,063	14,675,682	24,148,561	75,487,245	100,025,492
37 Wire and wire goods.....	77	5,967	24,431,236	47,685,689	41,846,020	89,934,431
38 Clothing, men's factory.....	150	10,923	27,427,231	40,596,632	43,077,754	83,363,124
39 Distilled liquors.....	8	2,181	8,411,344	26,387,363	57,392,285	81,959,527
40 Heating and cooking apparatus.....	61	5,523	21,387,289	41,608,315	37,798,913	81,544,201
Totals, Leading Industries...	6,238	436,520	1,749,290,370	4,390,656,134	3,699,405,296	8,247,637,718
Totals, All Industries.....	13,580	644,245	2,430,676,464	5,827,317,500	5,047,710,789	11,078,592,683

¹ Reported on a production basis.

Subsection 4.—The Manufactures of the Prairie Provinces

In the Prairie Provinces the leading industries have traditionally been those based on agricultural resources—grain-growing, cattle-raising and dairying areas. But recently slaughtering and meat packing has emerged as the major industry followed very closely by petroleum products. The latter industry has made tremendous strides in the Prairie Provinces since 1949 and now ranks highest in terms of selling value of factory shipments in Saskatchewan and second in both Manitoba and Alberta. It has increased its proportion of the total manufacturing production of the Prairie Provinces from 8.5 p.c. in 1949 to 16.6 p.c. in 1957. Next in importance generally are flour mills and dairy products followed by industries providing for the more essential needs of the resident population, such as the baking of bread, printing and publishing, etc. In Manitoba, the early commercial centre of the Prairie Provinces, water power, forest and, more recently, mineral resources have given rise to a diversification of industrial production. The extensive railway services require large shops for the maintenance of rolling-stock, especially in the Winnipeg area. In Saskatchewan, while the main economic role continues to be played by agriculture, the production of petroleum products occupies first place with a selling value of factory shipments more than double that of flour mills, which ranks second.

In the Prairie Provinces the nature of development varies from one province to another. Alberta, with its expanding oil and gas industries, has moved to the forefront, especially since 1950. Chemicals, particularly petrochemicals, have made striking gains, and now embrace various rayon intermediates and polythene plastics, as well as fertilizers and the manufacture of other inorganic products such as caustic soda and chlorine. Agriculture-based products still rank high in the province, as do structural materials such as steel, concrete products and hydraulic cement. Sizable gains have also been made by the expansion of food-processing plants.

Manitoba, next to Alberta in value of shipments, experienced great development in manufacturing production during the past decade although, on a percentage basis, it did not keep pace with the other Prairie Provinces. The change has been largely one of emphasis rather than magnitude—that emphasis moving from production of food and clothing to production of goods of mineral origin such as iron and steel, non-metallic mineral products, and products of petroleum and coal.

Developments in Saskatchewan have continued along more or less traditional lines. The largest gains in shipments have been recorded by the food processing industries and a substantial increase has also been shown by the building materials group, which includes non-metallic mineral products and lumber. However, the largest single gain in employment has been in the refining of oil for local use.

Considering the Prairie Provinces as an economic unit, 4,327 manufacturing establishments reporting in 1957 furnished employment to 94,985 persons who received \$318,153,043 in salaries and wages. They shipped goods valued at the factory at \$1,755,125,360 and spent \$1,030,039,991 for materials.

6.—Statistics of the Leading Industries of the Prairie Provinces, 1957

Industry	Estab-lish-ments	Em-ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Value of Factory Shipments
Manitoba	No.	No.	\$	\$	\$	\$
1 Slaughtering and meat packing...	11	3,058	11,782,928	82,494,172	26,131,616	110,144,729
2 Petroleum products.....	4	656	2,731,140	31,462,751	21,319,719	54,990,334 ¹
3 Railway rolling-stock.....	4	4,822	17,205,635	17,040,452	16,626,328	34,233,639 ¹
4 Butter and cheese.....	68	1,237	3,763,447	22,927,023	6,632,288	29,683,726
5 Clothing, men's factory.....	53	2,936	6,247,408	15,035,636	9,671,599	24,451,810
6 Flour mills.....	8	509	1,845,269	17,441,933	2,660,334	20,262,344
7 Furniture.....	121	1,879	5,554,293	11,019,816	8,704,185	19,938,463
8 Miscellaneous food preparations...	23	560	1,978,338	13,729,992	5,486,590	19,436,791

¹ Reported on a production basis.

6.—Statistics of the Leading Industries of the Prairie Provinces, 1957—concluded

Industry	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Value of Shipments
Manitoba—concluded	No.	No.	\$	\$	\$	\$
9 Printing and publishing.....	82	2,017	6,740,001	5,433,722	12,913,255	18,456,968
10 Pulp and paper.....	3	601	2,678,326	6,554,318	10,014,693	17,892,512
11 Bread and other bakery products.....	151	1,787	5,280,827	7,405,080	8,702,917	16,754,054
12 Clothing, women's factory.....	25	1,593	4,018,489	7,147,248	6,173,662	13,195,854
13 Breweries.....	6	658	2,756,707	2,683,476	9,817,615	12,709,063
14 Sheet metal products.....	28	994	3,418,375	7,124,725	4,156,765	11,548,452
15 Printing and bookbinding.....	84	1,296	4,262,694	3,737,717	7,134,925	10,938,190
16 Boxes and bags, paper.....	10	623	2,038,511	6,717,074	3,720,418	10,492,886
17 Miscellaneous iron and steel prod- ucts.....	12	695	2,686,654	5,007,882	3,390,263	8,813,615
18 Agricultural implements.....	15	525	1,731,666	4,387,715	3,902,455	7,976,629
19 Feeds, stock and poultry, prepared	39	232	5,672,738	5,654,241	1,805,692	7,532,692
20 Carbonated beverages.....	22	351	1,095,749	2,253,520	4,016,147	6,421,040
21 Paints, varnishes and lacquers....	5	270	782,408	3,121,045	2,394,990	5,615,576
22 Biscuits.....	3	363	1,021,189	2,703,208	2,757,103	5,457,232
23 Bags, cotton and jute.....	3	196	574,493	4,438,291	983,586	5,406,747
24 Other leading industries ¹	11	4,148	15,733,345	28,579,862	32,674,334	63,575,933
Totals, Leading Industries...	791	32,011	106,300,628	314,100,899	211,797,907	535,929,279
Totals, All Industries.....	1,590	43,884	140,200,256	379,799,214	273,162,757	664,529,736
Saskatchewan						
1 Petroleum products.....	10	1,239	6,002,267	57,499,210	28,645,039	89,580,404 ¹
2 Flour mills.....	9	759	2,697,993	31,484,689	7,041,149	39,194,171
3 Slaughtering and meat packing....	9	1,297	4,755,869	28,051,668	10,685,273	38,708,692
4 Butter and cheese.....	57	1,330	3,922,859	22,552,783	7,685,417	29,836,240
5 Bread and other bakery products.....	99	1,093	3,293,619	4,850,199	5,738,377	10,925,218
6 Breweries.....	5	348	1,506,281	2,282,301	7,786,997	10,149,714
7 Printing and publishing.....	96	1,198	3,804,061	2,243,989	6,534,261	8,882,286
8 Carbonated beverages.....	26	260	762,849	1,762,208	2,771,439	4,726,878
9 Sheet metal products.....	9	238	849,955	2,814,549	1,381,120	4,160,052
10 Sash, door and planing mills.....	32	400	1,220,896	2,297,174	1,742,045	4,113,103
11 Concrete products.....	22	183	626,926	1,546,596	1,339,631	3,030,895
12 Sawmills.....	182	487	642,392	1,380,045	1,450,671	2,905,011 ¹
13 Feeds, stock and poultry, prepared	12	75	210,824	1,702,423	259,394	2,130,011
Totals, Leading Industries¹...	568	8,907	30,296,791	160,467,834	83,060,813	248,342,675
Totals, All Industries.....	844	12,012	40,875,349	189,106,737	109,598,807	306,115,112
Alberta						
1 Slaughtering and meat packing....	16	4,001	15,109,874	122,623,319	25,380,009	148,848,513
2 Petroleum products.....	22	2,213	10,926,532	83,460,019	59,755,897	147,472,583 ²
3 Butter and cheese.....	96	1,962	6,071,328	31,698,369	9,450,220	41,456,613
4 Flour mills.....	10	663	2,004,427	21,330,281	5,112,672	26,518,307
5 Sash, door and planing mills.....	113	1,766	5,153,204	12,939,960	7,830,918	21,139,692
6 Bread and other bakery products.....	148	1,886	5,766,156	8,367,983	10,267,339	19,183,371
7 Concrete products.....	40	776	2,948,649	9,269,249	8,982,908	18,454,579
8 Sawmills.....	463	2,068	4,095,153	8,347,398	9,299,141	18,042,554 ¹
9 Bridge and structural steel work....	5	1,007	4,104,465	9,167,516	6,971,321	16,215,159 ¹
10 Breweries.....	8	555	2,276,754	4,055,458	11,972,362	16,100,808
11 Printing and publishing.....	80	1,458	5,037,536	4,174,580	11,069,386	15,365,074
12 Castings, iron.....	11	571	2,260,927	10,527,348	5,855,373	15,246,240
13 Primary plastics.....	4	491	2,342,056	5,268,680	8,447,670	13,903,332
14 Acids, alkalies and salts.....	4	480	2,207,486	3,693,237	7,245,236	10,854,873
15 Feeds, stock and poultry, prepared	52	280	825,980	7,005,366	2,358,875	9,509,324
16 Cement, hydraulic.....	3	462	1,095,552	1,697,960	6,309,752	9,271,918
17 Aircraft and parts.....	5	1,574	6,065,865	1,533,040	7,532,229	9,130,415 ¹
18 Sheet metal products.....	24	501	1,785,505	5,102,325	3,341,967	8,680,855
19 Clothing, men's factory.....	10	835	2,469,577	5,085,013	3,896,803	8,674,471
20 Machine shops.....	69	962	3,652,897	7,684,079	5,828,632	8,638,420
21 Miscellaneous food preparations....	13	274	835,814	5,747,808	2,987,018	8,568,274
22 Printing and bookbinding.....	81	988	3,470,205	2,487,836	5,488,505	8,035,910
23 Other leading industries ⁴	8	3,397	13,149,200	29,917,923	25,312,202	56,670,427
Totals, Leading Industries...	1,288	29,220	104,622,142	396,284,745	250,696,935	655,979,712
Totals, All Industries.....	1,893	39,089	137,077,438	461,134,040	312,037,090	784,480,512

¹ Reported on a production basis.² Includes aircraft and parts; bridge and structural steel work; cement, hydraulic; gypsum products; non-ferrous metal smelting and refining; primary iron and steel; and sugar refining.³ Hydraulic cement and non-ferrous metal smelting and refining are also leading industries. Statistics, however, are confidential since there are fewer than three firms reporting.⁴ Includes fertilizers; non-ferrous metal smelting and refining; railway rolling-stock; and sugar refining.

Subsection 5.—The Manufactures of British Columbia

British Columbia, with factory shipments totalling \$1,785,298,750 in 1957, ranked third among the provinces in manufacturing production. Forest resources, fisheries, minerals and electric power have given a broad base and wide diversification to its industrial development. British Columbia holds the dominant position among the provinces in the production of wood products, its output in 1957 making up 39 p.c. of the Canadian total. Sawmilling, pulp and paper, veneer and plywood, and sash, door and planing mills ranked first, second, fourth and fifth, respectively, in 1957. Third in importance was the petroleum products industry which moved up from seventh place in 1953 as a result of the completion of the Trans Mountain oil pipeline. The province also accounted for approximately 42 p.c. of the output of the nation's fish processing industry in 1957 and is mainly responsible for Canada's position as a major fish exporting nation.

Recently, many new developments have been taking place in areas far removed from older established industrial centres. A new railway cutting diagonally across the province from south to north has opened up the formerly locked interior of the province. Factories and plants in remote sections are drawing greater value in employment and dollars from natural resources. The growth of the province industrially may be indicated by the increase in employment—one and one-half times the prewar figure. In dollar terms, gross value of manufacturing has increased 620 p.c. since 1939. The consumption of 7,278,000,000 kwh. of electric power by manufacturers during 1957 marked a steady upward climb of 230 p.c. in the past decade. British Columbia ranks second among the provinces in available water power resources and its hydraulic development, which at the end of 1957 totalled 3,122,460 hp., was exceeded only by Quebec and Ontario.

The trend of manufacturing production in British Columbia curved slightly downward in 1957. Both employment and value of shipments declined, the former dropping 2.7 p.c. and the latter by 4.0 p.c. compared with an increase of 2.5 p.c. in value of factory shipments and 0.4 p.c. in employment for Canada as a whole. This recession followed several years of rapid expansion. During 1954, when the remainder of Canada was experiencing a minor recession, British Columbia was the only province to report increased employment, the increase being 2.2 p.c. For Canada as a whole there was a drop of 4.5 p.c. in the number of employees and 1.3 p.c. in value of shipments. Although British Columbia was not the only province to report increased shipments that year, its increase of 7.9 p.c. was, however, the highest of any province. In common with other provinces, manufacturing in British Columbia continued to expand during 1955 and 1956. From 1953 to 1957 employees in British Columbia advanced 12.6 p.c. compared with an increase of 2.4 p.c. for Canada, and the value of factory shipments was 30.6 p.c. higher for British Columbia compared with an increase of 24.7 p.c. for Canada as a whole.

7.—Statistics of the Leading Industries of British Columbia, 1957

Industry	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
1 Sawmills.....	1,541	26,637	95,351,853	182,658,637	147,175,380	335,038,867 ¹
2 Pulp and paper.....	12	7,366	35,070,708	71,950,061	87,890,237	169,468,855
3 Petroleum products.....	5	1,384	6,745,008	76,996,178	55,754,357	138,366,047 ¹
4 Veneer and plywood.....	17	5,995	22,431,250	42,723,812	33,839,998	76,749,790
5 Sash, door and planing mills.....	214	3,676	12,724,314	45,950,260	20,304,707	67,167,038
6 Fish processing.....	44	3,153	10,413,200	40,810,500	22,372,400	62,888,300
7 Slaughtering and meat packing.....	13	1,571	6,285,128	47,949,014	9,145,465	57,318,288
8 Shipbuilding.....	24	4,918	23,035,799	11,552,002	34,718,950	46,750,276 ¹
9 Miscellaneous food preparations.....	44	894	2,667,672	36,297,193	8,971,335	45,592,827
10 Butter and cheese.....	33	1,847	6,918,783	21,361,807	10,357,750	31,821,430
11 Bread and other bakery products.....	298	3,220	9,975,119	13,517,993	16,480,867	30,874,599
12 Fruit and vegetable preparations.....	63	2,378	5,806,195	23,212,901	10,767,087	30,832,368

¹ Reported on a production basis.

7.—Statistics of the Leading Industries of British Columbia, 1957—concluded

Industry	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost at Plant of Materials Used	Value Added by Manufacture	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
13 Printing and publishing.....	86	3,064	12,284,767	7,157,927	22,768,668	30,196,331
14 Bridge and structural steel work..	5	1,813	3,909,947	14,881,595	13,985,517	29,120,605 ¹
15 Fertilizers.....	4	1,104	4,967,251	12,474,966	13,732,237	26,920,140
16 Sheet metal products.....	33	1,103	4,731,086	14,591,840	10,165,596	24,641,986
17 Machinery, industrial.....	45	2,047	8,718,679	9,330,836	14,733,644	23,795,635
18 Boxes and bags, paper.....	16	1,133	4,079,065	13,323,463	9,053,096	22,202,509
19 Furniture.....	233	2,129	6,927,552	11,010,696	10,090,419	21,301,153
20 Breweries.....	10	681	2,791,953	4,442,579	14,680,584	19,160,251
21 Feeds, stock and poultry, prepared	39	656	2,079,696	12,833,454	4,276,831	17,603,342
Totals, Leading Industries²..	2,789	76,769	292,915,025	715,027,714	571,365,125	1,305,810,637
Totals, All Industries.....	4,250	105,631	405,129,932	985,519,123	767,914,301	1,785,298,750

¹ Reported on a production basis.² Non-ferrous metal smelting and refining is also a leading industry. Statistics, however, are confidential since there are fewer than three firms reporting.

Section 2.—Manufacturing Industries in Urban Centres

Table 8 indicates the extent to which the manufacturing industries are concentrated in urban centres and shows, by province, the proportion of the selling value of factory shipments contributed by cities and towns having shipments of over \$1,000,000 each. In the more highly industrialized provinces of Ontario and Quebec such cities and towns accounted for 79 p.c. and 95 p.c., respectively, of the total manufactures of those provinces in 1957, while in the Atlantic Provinces and British Columbia, where sawmilling, fish packing and dairying are leading industries, the proportions were 68 p.c. and 50 p.c., respectively. In the Prairie Provinces, manufacturing is confined largely to a few urban centres.

A trend towards the decentralization of industry is apparent in all provinces but the most striking change has been shown by Ontario where there has been a recent tendency to establish new industry in smaller urban centres and where many new one-industry areas have been opened up. For Canada as a whole the percentage of manufactures accounted for by urban centres having shipments of over \$1,000,000 was 85.8 in 1954 but dropped to 80.6 by 1957.

8.—Urban Centres, Each with Selling Value of Factory Shipments of Over \$1,000,000, Number of Establishments and Total Shipments in these Centres as a Percentage of the Provincial Total, by Province, 1957, and Totals for Canada, 1955-57.

Province or Territory	Urban Centres with Shipments of Over \$1,000,000 Each	Establish- ments Reporting in Urban Centres with Shipments of Over \$1,000,000	Shipments of Urban Centres having \$1,000,000 or Over	Total Shipments of Each Province	Shipments of Urban Centres having \$1,000,000 or Over as a Percentage of Total Shipments in the Province
	No.	No.	\$	\$	
Newfoundland.....	4	120	73,763,623	117,713,795	62.7
Prince Edward Island.....	3	60	16,974,145	24,952,853	68.0
Nova Scotia.....	26	501	265,697,648	427,299,045	62.2
New Brunswick.....	14	326	243,499,093	311,795,501	78.1
Quebec.....	184	8,385	6,324,703,364	6,679,595,056	94.7
Ontario.....	194	9,354	8,729,173,035	11,078,592,683	78.8
Manitoba.....	12	1,129	561,512,994	664,529,736	84.5
Saskatchewan.....	11	440	257,024,130	306,115,112	84.0
Alberta.....	17	969	524,487,248	784,480,512	66.9
British Columbia.....	34	2,258	889,879,990	1,785,298,750	49.8
Yukon and Northwest Territories..	—	—	—	8,221,268	—
Canada, 1957.....	499	23,542	17,886,715,270	22,183,594,311	80.6
1956.....	498	23,289	17,262,050,120	21,636,748,986	79.8
1955.....	482	23,618	15,704,708,812	19,513,933,811	80.5

9.—Principal Statistics of the Manufacturing Industries of the Six Leading Manufacturing Cities, Selected Years, 1939-57

City and Year	Estab-lish-ments	Em-ployees	Salaries and Wages	Cost of Fuel and Electricity	Cost at Plant of Materials Used	Gross Value of Products ¹
	No.	No.	\$	\$	\$	\$
Montreal, Que. 1939	2,501	105,315	114,602,118	7,667,848	254,188,246	483,246,583
1946	3,785	173,507	291,381,617	14,740,538	602,667,823	1,147,945,303
1949	4,136	184,779	399,943,526	16,487,474	847,444,669	1,596,713,694
1953	4,398	193,129	544,284,191	18,428,249	1,067,911,378	2,042,662,785
1955	4,379	176,998	529,339,811	19,553,134	1,021,717,306	1,963,367,235
1956	4,289	182,759	582,256,675	22,354,978	1,175,253,762	2,207,686,246
1957	4,268	183,996	611,657,486	23,540,996	1,214,443,559	2,288,258,169
Toronto, Ont. 1939	2,885	98,702	122,553,435	7,306,351	240,532,281	482,532,331
1946	3,632	145,566	247,298,288	12,238,707	549,266,912	1,036,939,790
1949	4,005	168,562	368,510,524	17,003,151	837,148,440	1,579,186,450
1953	3,781	154,251	478,086,271	18,968,416	980,873,073	1,875,747,249
1955	3,497	134,235	448,775,761	18,788,747	916,493,539	1,732,099,123
1956	3,411	133,758	470,860,187	19,997,349	962,271,402	1,797,706,145
1957	3,312	132,356	482,758,834	20,936,055	961,000,335	1,832,080,726
Hamilton, Ont. 1939	461	31,512	39,563,423	5,267,577	70,829,034	152,746,340
1946	501	45,951	80,959,432	10,434,888	150,977,835	308,033,098
1949	546	54,665	137,641,333	17,728,214	285,180,403	563,982,920
1953	566	60,451	201,515,979	22,408,131	385,515,852	824,407,315
1955	588	55,202	200,311,361	24,807,502	395,047,070	844,835,085
1956	585	58,742	232,166,085	28,649,240	498,410,570	987,728,987
1957	562	57,095	237,883,530	28,217,591	502,608,132	1,031,430,829
Windsor, Ont. 1939	222	17,729	25,938,890	1,673,417	63,907,106	122,474,320
1946	256	30,889	60,315,436	3,748,979	138,788,813	244,925,148
1949	283	34,591	94,304,627	5,373,123	271,392,923	494,162,203
1953	338	37,514	140,481,193	7,559,592	402,209,586	682,273,319
1955	334	25,654	101,810,378	4,975,650	186,275,443	374,512,418
1956	336	24,091	96,798,387	5,453,651	186,300,126	369,790,090
1957	318	29,377	122,169,670	6,568,182	290,073,160	533,531,623
Winnipeg, Man. 1939	648	17,571	20,717,273	1,491,823	44,873,043	81,024,272
1946	756	26,730	42,354,650	2,625,075	121,531,306	206,381,007
1949	860	28,687	58,604,162	3,166,077	143,827,270	255,006,806
1953	860	28,230	76,008,218	3,266,587	156,860,845	300,186,774
1955	873	26,392	75,281,647	3,541,450	152,575,494	291,084,611
1956	869	26,629	80,891,909	3,669,114	163,808,668	309,520,043
1957	856	27,039	83,809,725	4,069,453	166,092,377	314,229,185
Vancouver, B.C. 1939	829	17,957	22,382,192	1,397,159	56,565,511	101,267,243
1946	1,071	31,408	55,960,984	3,075,458	138,045,068	270,165,166
1949	1,225	33,536	78,793,345	4,392,716	204,642,985	358,620,526
1953	1,316	33,822	108,896,725	5,448,266	255,906,780	448,591,543
1955	1,330	34,663	120,488,180	5,757,268	276,666,483	489,181,449
1956	1,299	36,052	131,540,861	6,326,318	299,290,344	534,658,163
1957	1,280	35,666	138,199,452	6,578,883	305,719,965	540,766,123

¹ Net value is derived from gross value by deducting cost of materials, fuel and electricity. In 1952 gross value of products was replaced by selling value of factory shipments; see text on p. 661.

10.—Principal Statistics of the Manufacturing Industries in the Six Leading Metropolitan Areas, 1956 and 1957

Year and Metropolitan Area	Estab-lish-ments	Em-ployees	Salaries and Wages	Cost of Fuel and Electricity	Cost at Plant of Materials Used	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
1956						
Montreal.	5,074	249,964	827,703,886	56,240,720	2,113,216,117	3,786,635,501
Toronto.	4,704	207,860	743,830,124	33,441,464	1,528,297,518	2,924,420,939
Hamilton.	707	62,318	243,291,570	29,540,671	520,793,427	1,029,717,603
Vancouver.	1,768	56,253	206,967,222	11,876,376	509,961,072	918,584,332
Windsor.	395	35,440	141,559,724	8,682,445	329,719,889	613,420,207
Winnipeg.	1,061	37,567	117,477,718	8,833,185	303,835,200	525,212,786
1957						
Montreal.	5,120	256,312	895,400,304	63,798,670	2,128,827,485	3,922,951,240
Toronto.	4,765	210,395	783,250,045	35,341,922	1,542,445,150	3,031,304,841
Hamilton.	703	60,997	250,844,563	29,348,933	530,275,129	1,082,274,355
Vancouver.	1,782	56,000	218,584,752	12,786,783	523,033,536	937,850,315
Windsor.	382	31,072	128,934,577	7,020,596	302,854,818	560,122,524
Winnipeg.	1,065	38,760	124,195,210	9,338,527	315,195,938	545,949,521

11.—Statistics of Manufactures of Municipalities, each with Selling Value of Factory Shipments of \$5,000,000 or Over and with Three or More Establishments, 1957

NOTE.—Statistics for urban centres with three or more establishments cannot be published when one establishment has 75 p.c. or two establishments 90 p.c. of the total value of shipments.

Province and Municipality	Establishments	Employees	Salaries and Wages	Cost of Fuel and Electricity	Cost at Plant of Materials Used	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Newfoundland—						
St. John's.....	95	2,595	7,250,649	620,221	12,586,431	27,641,878
Prince Edward Island—						
Charlottetown.....	36	644	1,675,090	204,061	8,377,520	11,670,163
Nova Scotia—						
Amherst.....	22	1,116	3,353,687	282,350	4,954,536	10,875,842
Halifax.....	144	6,292	18,717,244	1,277,335	32,611,004	68,352,826
Lunenburg.....	15	753	2,009,738	142,192	4,787,740	7,769,682
New Glasgow.....	31	948	2,807,380	468,180	4,445,304	10,338,909
Sydney.....	46	5,720	22,654,435	4,741,630	48,250,686	79,078,754
Trenton.....	4	1,802	6,262,707	680,297	20,747,519	30,910,731
Truro.....	42	1,077	2,235,663	182,321	4,859,277	9,270,398
Yarmouth.....	30	791	1,657,721	148,120	4,324,126	8,391,068
New Brunswick—						
Fredericton.....	39	879	2,158,464	213,402	4,324,423	8,449,107
Lancaster.....	10	744	2,629,585	955,728	7,921,719	16,289,771
Moncton.....	58	2,833	9,211,538	698,704	25,425,148	39,520,733
Saint John.....	97	4,015	11,399,643	1,687,851	51,039,032	78,373,695
Quebec—						
Acton Vale.....	15	1,109	2,351,057	142,341	6,604,150	10,749,295
Beauharnois.....	20	1,638	6,061,876	4,082,197	14,229,263	33,489,355
Berthierville.....	19	659	1,442,568	179,515	2,713,703	6,160,229
Cap de la Madeleine.....	45	2,741	7,761,421	1,697,292	26,527,338	48,088,355
Coaticook.....	17	862	2,038,365	108,344	4,050,052	7,469,758
Cowansville.....	11	1,666	4,946,786	489,548	7,932,752	16,852,733
Drummondville.....	55	6,160	17,762,070	1,729,675	32,008,565	69,613,777
Farnham.....	21	1,022	2,885,613	236,415	5,529,671	11,577,952
Granby.....	83	5,628	15,847,268	1,012,790	37,022,246	70,750,472
Grand Mère.....	31	2,566	7,818,873	1,752,431	14,371,681	31,836,831
Hull.....	52	3,302	11,841,852	2,564,940	29,440,625	54,494,207
Huntingdon.....	14	605	1,937,415	200,727	5,892,908	9,160,185
Jacques Cartier.....	33	1,540	4,926,186	346,658	10,072,864	19,451,138
Joliette.....	58	2,308	6,391,243	718,297	11,119,079	23,297,517
Jonquière.....	19	512	1,802,081	242,957	2,673,474	7,518,323
Lachine.....	79	14,274	59,100,641	2,206,087	94,076,577	193,276,314
Lachute.....	18	357	1,088,694	196,924	3,134,988	5,383,278
LaSalle.....	49	5,880	22,518,066	3,353,279	67,732,612	136,158,492
L'Assomption.....	16	647	1,667,718	130,669	4,564,480	7,358,173
Lennoxville.....	12	446	1,249,574	222,666	3,399,051	6,526,800
Lévis.....	38	571	1,342,487	85,772	2,844,368	5,151,036
Longueuil.....	29	4,208	15,619,590	495,089	15,273,273	39,170,241
Louiseville.....	21	1,656	3,729,985	384,124	6,397,745	10,208,105
Magog.....	36	2,652	6,766,659	855,320	33,600,296	48,837,393
Marieville.....	20	538	1,283,891	115,670	5,510,866	7,824,195
Montmagny.....	42	1,184	3,115,431	228,011	6,401,596	12,813,802
Mount Royal.....	43	5,457	20,666,834	663,387	58,835,180	96,995,680
Montreal.....	4,268	183,996	611,657,486	23,540,996	1,214,443,559	2,288,258,169
Montreal East.....	41	6,808	30,793,707	24,976,100	448,461,379	692,340,565
Montreal North.....	47	1,181	4,020,125	189,329	7,508,101	14,244,619
Outremont.....	66	1,547	4,987,994	193,561	13,377,047	24,638,725
Plessisville.....	29	1,112	3,098,369	201,932	5,488,643	10,804,690
Pointe aux Trembles.....	18	639	2,510,368	2,119,075	24,678,050	36,277,987
Princeville.....	19	670	1,665,764	117,116	7,004,998	10,147,797
Quebec.....	445	15,747	47,200,035	6,464,966	103,947,986	203,815,210
Richmond.....	15	714	1,831,122	65,944	3,446,782	6,529,303
Rock Island.....	14	622	1,819,853	85,169	1,365,356	5,448,107
St. Hyacinthe.....	83	4,068	10,364,263	867,145	29,127,864	48,083,313
St. Jean.....	81	5,790	19,677,928	1,244,256	31,970,036	64,893,956
St. Jérôme (Terrebonne Co.).....	67	3,306	9,061,590	811,731	16,249,734	31,441,436
St. Joseph de Sorel.....	7	1,562	5,067,197	568,185	6,997,395	19,314,318
St. Lambert.....	24	898	2,896,128	138,044	5,758,646	11,123,178
St. Laurent.....	94	18,432	75,806,746	2,372,528	85,791,339	216,842,427
Ste. Marie (Beauce Co.).....	24	783	2,512,355	341,795	6,813,499	11,791,678
St. Michel (de Laval).....	98	1,712	5,709,743	537,132	13,150,332	24,085,260
St. Rémi.....	16	495	1,049,683	78,909	3,392,900	5,673,278

11.—Statistics of Manufactures of Municipalities, each with Selling Value of Factory Shipments of \$5,000,000 or Over and with Three or More Establishments, 1957—continued

Province and Municipality	Establishments	Employees	Salaries and Wages	Cost of Fuel and Electricity	Cost at Plant of Materials Used	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Quebec—concluded						
Ste. Thérèse.....	44	1,211	3,136,093	266,445	6,715,415	13,076,965
Shawinigan Falls.....	46	6,257	26,399,270	11,541,442	56,684,263	139,075,241
Sherbrooke.....	127	7,968	22,699,447	1,608,013	55,415,937	106,608,695
Terrebonne.....	17	614	1,714,625	92,352	3,083,749	6,403,505
Trois Rivières.....	93	8,791	30,350,861	9,432,256	58,310,775	128,909,134
Valleyfield.....	47	3,684	10,605,391	1,125,323	20,901,192	42,303,029
Verdun.....	75	1,777	4,602,061	131,441	8,481,801	16,567,198
Victoriaville.....	58	2,776	6,661,192	309,843	12,818,007	24,114,280
Waterloo.....	23	598	1,650,454	111,303	3,007,915	5,761,923
Westmount.....	39	1,807	6,117,502	454,981	6,838,060	18,195,996
Ontario—						
Acton.....	21	856	2,394,200	246,845	6,293,019	10,345,831
Ajax.....	35	1,592	5,613,442	263,688	11,899,034	21,402,410
Amherstburg.....	13	779	2,732,680	744,598	5,432,271	17,212,456
Arnprior.....	20	1,013	3,030,666	187,417	4,313,855	11,468,404
Aurora.....	21	796	2,239,229	135,915	5,578,766	9,468,223
Barrie.....	40	1,839	6,245,993	409,039	16,771,800	31,825,863
Belleville.....	66	3,336	11,835,317	2,380,490	13,119,021	39,466,332
Bowmanville.....	17	888	3,318,536	220,587	5,701,319	13,622,448
Brampton.....	46	1,675	5,661,266	373,152	10,649,234	21,644,934
Brantford.....	169	10,474	35,981,624	2,094,813	67,032,465	144,091,141
Brockville.....	47	3,242	11,589,396	717,072	42,505,114	65,314,658
Burlington.....	31	1,114	3,888,314	270,325	8,165,911	16,191,348
Chatham.....	71	3,759	14,422,744	1,135,183	77,857,355	103,217,092
Cobourg.....	34	1,103	3,573,169	250,354	10,521,127	21,340,055
Collingwood.....	25	1,480	4,644,400	171,449	9,776,201	16,640,661
Cornwall.....	55	6,838	25,207,796	5,694,960	42,401,547	92,117,441
Dundas.....	38	1,442	5,112,114	208,742	6,536,063	13,688,733
Dunnville.....	21	1,267	3,171,325	179,851	9,716,540	15,583,640
Eastview.....	27	476	1,739,130	116,076	6,159,230	8,809,398
Elmira.....	20	704	2,300,157	250,221	7,222,075	13,119,488
Fort Erie.....	29	912	3,353,591	145,091	10,044,936	20,163,470
Fort William.....	71	3,642	14,777,607	4,070,263	31,700,139	64,042,754
Galt.....	93	7,355	23,961,616	975,489	42,801,349	83,950,806
Gananoque.....	18	872	3,083,579	249,663	5,628,322	10,316,312
Georgetown.....	25	1,268	4,529,590	295,298	9,404,606	15,994,336
Goderich.....	19	483	1,466,880	230,501	3,267,445	6,892,973
Guelph.....	115	6,718	23,536,838	1,396,342	41,537,036	87,562,091
Hamilton.....	562	57,095	237,883,530	28,217,591	502,608,132	1,031,430,829
Hanover.....	24	1,021	2,967,477	122,958	4,817,810	9,217,321
Hespeler.....	16	1,585	4,964,719	533,382	8,049,699	16,379,988
Huntsville.....	15	403	1,112,987	101,403	3,301,196	5,117,910
Ingersoll.....	30	1,125	3,597,023	241,174	11,289,471	19,951,180
Kingston.....	80	5,955	22,013,105	1,792,869	46,527,907	93,497,339
Kitchener.....	211	15,731	55,031,611	2,687,556	119,987,753	235,155,859
Leaside.....	47	7,930	30,833,438	1,282,489	56,636,631	121,897,305
Lindsay.....	36	1,581	4,659,626	412,362	7,693,546	16,262,723
Listowel.....	14	507	1,312,112	121,016	2,987,907	5,099,362
London.....	281	15,768	54,815,015	2,908,541	101,732,390	219,099,033
Long Branch.....	21	944	3,515,096	208,502	8,411,516	18,001,569
Merrittton.....	16	2,015	8,386,629	1,426,769	14,718,557	33,355,825
Midland.....	28	1,151	3,182,664	128,256	7,808,048	13,171,195
Milton.....	16	872	3,418,148	582,255	5,871,811	13,307,502
Mimico.....	40	971	3,337,212	202,008	6,172,045	11,800,341
Napanee.....	18	521	1,618,201	158,124	5,035,249	8,645,082
New Liskeard.....	15	642	2,064,761	124,763	3,619,595	6,805,723
Newmarket.....	21	1,048	3,168,455	186,030	5,102,053	11,739,763
New Toronto.....	43	7,599	33,087,232	2,218,641	93,688,537	175,804,092
Niagara Falls.....	85	5,044	19,617,537	4,737,839	35,587,635	78,875,355
North Bay.....	31	854	2,987,707	545,780	4,398,330	9,301,848
Oakville.....	52	1,841	6,741,517	454,552	13,398,709	28,300,171
Orillia.....	61	2,456	7,682,252	505,407	10,576,350	26,970,107
Ottawa.....	307	10,324	35,015,031	2,667,365	52,890,632	121,844,932
Owen Sound.....	52	2,673	8,508,693	377,819	11,295,097	27,312,118
Paris.....	31	1,341	4,052,327	169,318	6,747,291	12,394,612
Pembroke.....	27	1,384	4,191,511	177,960	7,373,763	14,180,460
Perth.....	26	874	2,287,483	126,512	4,616,486	9,872,045
Peterborough.....	94	10,380	42,509,920	1,467,466	75,316,309	155,236,711
Port Arthur.....	61	2,657	10,519,597	2,352,464	21,168,954	50,080,247
Preston.....	43	2,603	8,018,538	328,213	10,744,856	23,775,389
Renfrew.....	23	800	2,437,763	163,273	4,388,783	8,521,028

11.—Statistics of Manufactures of Municipalities, each with Selling Value of Factory Shipments of \$5,000,000 or Over and with Three or More Establishments, 1957—concluded

Province and Municipality	Estab- lish- ments	Em- ployees	Salaries and Wages	Cost of Fuel and Electricity	Cost at Plant of Materials Used	Selling Value of Factory Shipments
	No.	No.	\$	\$	\$	\$
Ontario—concluded						
St. Catharines.....	107	6,138	23,707,951	1,098,833	33,636,024	73,449,061
St. Mary's.....	14	580	2,136,237	1,525,761	5,238,576	14,044,824
St. Thomas.....	53	2,674	9,076,167	461,813	18,934,238	41,301,274
Sarnia.....	56	7,229	35,580,384	19,683,685	184,259,302	355,282,252
Sault Ste. Marie.....	52	8,977	43,889,242	8,345,541	91,015,048	171,453,502
Simcoe.....	32	1,286	4,606,405	325,067	24,759,203	34,112,704
Smith's Falls.....	31	771	2,169,462	178,976	3,962,295	10,549,852
Stratford.....	75	3,924	12,894,163	558,505	24,280,202	44,802,451
Strathroy.....	23	559	1,446,626	74,150	3,107,241	5,261,896
Streetsville.....	16	716	2,614,818	417,097	4,742,720	11,031,090
Sudbury.....	57	1,120	3,915,296	427,515	7,586,835	16,207,462
Swansea.....	15	872	3,445,918	214,695	7,975,068	14,550,328
Thorold.....	24	1,590	6,520,940	1,869,635	12,216,429	25,930,419
Tillsonburg.....	26	985	2,833,245	359,253	17,386,931	23,012,070
Toronto.....	3,312	132,356	482,758,834	20,936,655	961,000,335	1,832,080,726
Trenton.....	31	1,902	6,153,833	797,759	11,389,328	25,279,890
Wallaceburg.....	30	2,104	7,327,556	1,091,265	8,494,903	21,242,350
Waterloo.....	67	3,337	11,304,713	577,200	19,612,858	54,988,079
Wolland.....	58	3,301	12,176,357	956,380	19,715,170	42,954,046
Weston.....	54	2,445	9,761,825	527,797	17,389,195	36,886,875
Windsor.....	218	29,377	122,169,670	6,538,182	290,073,160	533,531,623
Wingham.....	20	390	999,358	99,351	2,727,438	5,069,452
Woodstock.....	58	4,118	14,093,575	2,311,073	33,816,528	64,255,265
Manitoba—						
Brandon.....	45	825	2,802,707	441,995	11,486,105	18,447,358
St. Boniface.....	89	4,881	17,236,521	2,303,218	106,355,736	144,337,906
St. James.....	46	2,716	9,188,180	329,651	15,388,364	32,010,968
Winnipeg.....	856	27,039	83,809,725	4,069,453	166,092,377	314,229,185
Saskatchewan—						
Moose Jaw.....	43	1,353	4,803,044	1,177,038	34,546,939	50,552,482
Prince Albert.....	36	899	3,060,590	252,497	12,462,752	19,084,426
Regina.....	149	3,521	13,192,101	3,386,166	52,706,546	97,617,723
Saskatoon.....	129	3,121	10,995,088	1,131,447	51,259,720	74,463,094
Alberta—						
Calgary.....	349	11,091	41,221,471	2,653,770	128,847,254	212,658,924
Edmonton.....	402	12,523	43,185,840	2,284,503	140,736,304	227,511,393
Lethbridge.....	56	1,196	3,727,105	301,477	9,165,315	18,893,948
Medicine Hat.....	42	1,201	3,948,526	510,178	14,930,299	22,067,890
Red Deer.....	29	388	1,081,433	105,078	4,586,325	7,536,197
British Columbia—						
Kamloops.....	38	501	1,610,127	421,495	5,682,242	8,948,767
Kelowna.....	35	890	2,705,368	166,195	5,264,400	9,316,946
Nanaimo.....	26	475	1,728,000	148,489	2,986,746	5,935,151
New Westminster.....	105	6,054	22,916,986	1,756,874	60,815,813	107,183,783
North Vancouver.....	70	3,140	13,903,547	810,878	12,382,700	37,125,864
Port Alberni.....	18	2,265	9,335,320	1,074,040	21,124,482	32,475,489
Port Moody.....	7	682	2,889,323	118,517	10,913,380	15,977,664
Prince George.....	66	868	2,857,500	257,299	9,794,118	14,720,701
Prince Rupert.....	19	400	1,244,384	110,554	3,022,448	4,377,232
Vancouver.....	1,280	35,666	138,199,452	6,578,883	305,719,965	540,766,123
Victoria.....	202	4,828	18,016,688	996,873	28,937,895	61,068,998

CHAPTER XV.—CAPITAL EXPENDITURES, CONSTRUCTION AND HOUSING

CONSPECTUS

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NOTE.—The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

This Chapter provides data on the capital expenditures made by all sectors of the Canadian economy on construction and on machinery and equipment, together with summaries of other available statistics for the construction industry. Section 1 describes the purpose of capital expenditures and shows the amounts spent by each of the various industrial or economic sectors. Section 2 brings together a number of summaries of related series on construction activity: value of work performed by type of structure, value of materials used, salaries and wages paid and numbers employed, contracts awarded and building permits issued. Government aid to house-building and construction of dwelling units are covered in Section 3.

Section 1.—Capital Expenditures on Construction and on Machinery and Equipment

Capital expenditure plans of all sectors of the economy call for a total outlay of an estimated \$8,770,000,000 in 1960. Such a capital program, if carried out as planned, will be the largest on record, exceeding the previous peak of \$8,717,000,000 established in 1957 and involving a 4-p.c. increase over the program accomplished in 1959. Within the total, construction outlays are expected to reach a record amount moderately in excess of the levels of the past few years, and expenditures for machinery are likely to show a significant improvement over those made in 1958 and 1959 and to approach the record level of 1957.

1.—Capital Expenditures on Construction and on Machinery and Equipment, 1950-60

NOTE.—Actual expenditures 1950-58; preliminary actual 1959; intentions 1960.

Year	Capital Expenditures			Total Expenditure as Percentage of Gross National Product
	Construction	Machinery and Equipment	Total	
	\$'000,000	\$'000,000	\$'000,000	p.c.
1950.....	2,453	1,483	3,936	21.9
1951.....	2,871	1,868	4,739	22.4
1952.....	3,434	2,057	5,491	22.9
1953.....	3,756	2,220	5,976	23.9
1954.....	3,737	1,984	5,721	23.0
1955.....	4,169	2,075	6,244	23.0
1956.....	5,273	2,761	8,034	26.3
1957.....	5,784	2,933	8,717	27.4
1958.....	5,830	2,534	8,364	25.7
1959.....	5,798	2,613	8,411	24.3
1960.....	5,942	2,828	8,770	..

While there are indications of a fairly moderate increase in total private and public investment in 1960, the composition of the program will be changed significantly from that of the previous two years as shown in Table 2.

2.—Capital Expenditures and Percentage Distribution, by Type, 1958-60

NOTE.—Actual expenditures 1958; preliminary actual 1959; intentions 1960.

Type	Capital Expenditures			Distribution		
	1958	1959	1960	1958	1959	1960
	\$'000,000	\$'000,000	\$'000,000	p.c.	p.c.	p.c.
Construction.....	5,830	5,798	5,942	69.7	68.9	67.8
Housing.....	1,782	1,759	1,696	21.3	20.9	19.3
Non-residential construction.....	4,048	4,039	4,246	48.4	48.0	48.5
Machinery and Equipment.....	2,534	2,613	2,828	30.3	31.1	32.2
Totals.....	8,364	8,411	8,770	100.0	100.0	100.0

Of particular importance is the resurgence in business investment anticipated, following the sharp decline in 1958 and the further easing in 1959. On the other hand, outlays for housing and social capital are likely to constitute a smaller part of the total investment program, showing an increase of about 1 p.c. compared with increases of 14 p.c. and 6 p.c. in 1958 and 1959 respectively. This change in emphasis from social to business capital is related to the changes occurring in general economic conditions and reflects future demand trends anticipated by businessmen. Substantial additions to industrial plant and equipment in 1957 and 1958 coincident with a temporary weakening in market demands resulted, for a time, in considerable free capacity in many industries. However, during 1959 markets strengthened both at home and abroad, production increased and operating levels moved upward. This, in turn, created new interest in expansion. At the same time, improved earnings together with increases in depreciation reserves added to the supply of internal funds available for expansion or modernization purposes.

Thus, developments in 1959 created a much more favourable atmosphere for an increased rate of business investment and, as a result, business capital outlays in 1960 are expected to show an increase of 6 p.c. over those of 1959. A sharply increased rate of spending in resource-based industries will provide the most important contribution to the total increase in investment. Outlays in the forest and mineral products industries are likely to be about 20 p.c. higher, reflecting a substantially higher rate of spending for new facilities in the base-metal mining and primary iron and steel industries and in forest-based industries. Investment in commercial building is expected to be notably higher in 1960, with increases planned in retail outlets and office buildings, and secondary manufacturing industries also intend to expand their outlays significantly. On the other hand, capital spending by the fuel and power, and transportation and communication industries will involve little change from 1959. Within the category of engineering construction, moderate increases in road-building and in the construction of water and sewer works and telephone facilities will be offset by equally moderate declines in marine and railway construction and in the building of power facilities.

Expenditures for housing and social capital are expected to continue at about the levels of 1959. Within the total, a reduced level of spending on federal projects will help to make way for larger programs in other fields. Housing outlays are also expected to be moderately lower in 1960; it is estimated that the number of new housing units started will be from 10 to 15 p.c. fewer than the 141,300 starts of 1959. However, with 82,000 units under construction at the start of the year, completions are expected to be close to the 1959 level of 146,000. The value of housing completed in 1960 will involve a decline of about 4 p.c. from 1959. Reduced outlays in the two areas of federal projects and housing will be offset by moderate increases in the construction programs of provincial and municipal governments and by a sharply higher rate of activity in the building of hospital and university facilities.

The acquisition of machinery and equipment will receive greater emphasis in the 1960 investment program than it received in the two previous years. Machinery purchases are expected to increase by about 8 p.c. over 1959 but will be slightly below the all-time record for such expenditures established in 1957. The demand for industrial machinery particularly will be strong in view of the projected increase of 17 p.c. in such outlays by the manufacturing industry. More moderate increases in demand may be anticipated for office, store and hospital equipment, and for transportation equipment other than railway rolling-stock, the latter being the only major type of equipment for which a lower level of demand is indicated.

3.—Summary of Capital and Repair Expenditures, by Economic Sector, 1958-60

NOTE.—Actual expenditures 1958; preliminary actual 1959; intentions 1960.

(Millions of dollars)

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Con- struc- tion	Ma- chinery and Equip- ment	Total	Con- struc- tion	Ma- chinery and Equip- ment	Total	Con- struc- tion	Ma- chinery and Equip- ment	Total
Agriculture and fishing.....1958	101	364	465	73	133	206	174	497	671 *
1959	112	443	555	81	146	227	193	589	782
1960	113	458	571	82	152	234	195	610	805
Forestry.....1958	19	14	33	16	25	41	35	39	74
1959	22	24	46	14	26	40	36	50	86
1960	30	33	63	15	25	40	45	58	103
Mining, quarrying and oil wells.....1958	242	100	342	24	75	99	266	175	441
1959	262	82	344	25	76	101	287	158	445
1960	318	88	406	24	78	102	342	166	508
Manufacturing.....1958	398	697	1,095	110	462	572	508	1,159	1,667
1959	358	716	1,074	116	487	603	474	1,203	1,677
1960	356	840	1,196	114	490	604	470	1,330	1,800
Utilities.....1958	1,405	748	2,153	250	400	650	1,655	1,148	2,803
1959	1,158	690	1,848	267	417	684	1,425	1,107	2,532
1960	1,135	700	1,835	285	420	705	1,420	1,120	2,540
Construction.....1958	16	141	157	4	118	122	20	259	279
1959	16	167	183	4	119	123	20	286	306
1960	17	170	187	4	122	126	21	292	313
Housing.....1958	1,782	—	1,782	407	—	407	2,189	—	2,189
1959	1,759	—	1,759	431	—	431	2,190	—	2,190
1960	1,696	—	1,696	467	—	467	2,153	—	2,153
Trade (wholesale and retail).....1958	195	161	356	35	33	68	230	194	424
1959	174	159	333	32	34	66	206	193	399
1960	187	177	364	30	34	64	217	211	428
Finance, insurance and real estate.....1958	150	30	180	12	6	18	162	36	198
1959	204	40	244	12	6	18	216	46	262
1960	253	46	299	14	7	21	267	53	320
Commercial services.....1958	51	118	169	16	44	60	67	162	229
1959	56	126	182	15	44	59	71	170	241
1960	59	133	192	12	44	56	71	177	248
Institutional services.....1958	457	57	514	49	8	57	506	65	571
1959	473	58	531	54	9	63	527	67	594
1960	559	67	626	54	11	65	613	78	691
Government departments....1958	1,014	104	1,118	266	48	314	1,280	152	1,432
1959	1,204	108	1,312	278	56	334	1,482	164	1,646
1960	1,219	116	1,335	283	58	341	1,502	174	1,676
Totals.....1958	5,830	2,534	8,364	1,262	1,352	2,614	7,092	3,886	10,978
1959	5,798	2,613	8,411	1,329	1,420	2,749	7,127	4,033	11,160
1960	5,942	2,828	8,770	1,374	1,441	2,815	7,316	4,269	11,585

Details of some of the above economic sectors are given in Table 4. The construction industry and housing are dealt with in Sections 2 and 3 of this Chapter.

4.—Capital and Repair Expenditures for Certain Economic Sectors, 1958-60

NOTE.—Actual expenditures 1958; preliminary actual 1959; intentions 1960.

(Millions of dollars)

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Con- struc- tion	Ma- chinery and Equip- ment	Total	Con- struc- tion	Ma- chinery and Equip- ment	Total	Con- struc- tion	Ma- chinery and Equip- ment	Total
MANUFACTURING									
Foods and beverages.....1958	40.5	85.7	126.2	13.9	51.4	65.3	54.4	137.1	191.5
1959	41.4	79.9	121.3	15.4	48.4	63.8	56.8	128.3	185.1
1960	53.0	82.0	135.0	15.2	47.5	62.7	68.2	129.5	197.7
Tobacco and tobacco products.....1958	4.1	7.5	11.6	1.1	2.8	3.9	5.2	10.3	15.5
1959	3.2	4.0	7.2	0.6	1.4	2.0	3.8	5.4	9.2
1960	3.1	4.6	7.7	0.7	1.4	2.1	3.8	6.0	9.8
Rubber products.....1958	2.0	6.4	8.4	1.0	7.5	8.5	3.0	13.9	16.9
1959	4.0	8.8	12.8	1.1	7.9	9.0	5.1	16.7	21.8
1960	5.9	19.7	25.6	1.1	7.8	8.9	7.0	27.5	34.5
Leather products.....1958	0.5	1.9	2.4	0.6	2.3	2.9	1.1	4.2	5.3
1959	0.8	2.0	2.8	0.5	2.5	3.0	1.3	4.5	5.8
1960	0.7	1.8	2.5	0.6	2.3	2.9	1.3	4.1	5.4
Textile products.....1958	2.6	20.7	23.3	2.8	16.0	18.8	5.4	38.7	42.1
1959	4.4	19.2	23.6	3.2	16.3	19.5	7.6	35.5	43.1
1960	4.0	22.2	26.2	3.1	16.8	19.9	7.1	39.0	46.1
Clothing.....1958	0.7	7.5	8.2	1.1	3.9	5.0	1.8	11.4	13.2
1959	1.6	9.4	11.0	1.3	4.0	5.3	2.9	13.4	16.3
1960	1.0	8.1	9.1	1.2	4.0	5.2	2.2	12.1	14.3
Wood products.....1958	8.8	22.1	30.9	5.9	24.7	30.6	14.7	46.8	61.5
1959	12.4	34.6	47.0	5.8	24.5	30.3	18.2	59.1	77.3
1960	10.2	31.3	41.5	5.7	24.2	29.9	15.9	55.5	71.4
Paper products.....1958	25.5	101.7	127.2	7.2	85.7	92.9	32.7	187.4	220.1
1959	22.1	98.8	120.9	8.4	90.1	98.5	30.5	188.9	219.4
1960	31.8	138.1	169.9	7.4	91.6	99.0	39.2	229.7	268.9
Printing, publishing and allied industries.....1958	13.4	20.1	33.5	2.0	6.3	8.3	15.4	26.4	41.8
1959	11.2	24.3	35.5	1.9	6.0	7.9	13.1	30.3	43.4
1960	6.7	18.2	24.9	2.3	6.1	8.4	9.0	24.3	33.3
Iron and steel products.....1958	35.7	90.7	126.4	14.4	83.3	97.7	50.1	174.0	224.1
1959	43.3	114.0	157.3	16.0	103.7	119.7	59.3	217.7	277.0
1960	43.9	141.8	185.7	16.5	102.4	118.9	60.4	244.2	304.6
Transportation equipment.....1958	16.6	37.7	54.3	10.4	30.7	41.1	27.0	68.4	95.4
1959	19.6	37.6	57.2	10.0	30.7	40.7	29.6	68.3	97.9
1960	23.3	35.7	59.0	9.8	28.4	38.2	33.1	64.1	97.2
Non-ferrous metal products...1958	43.7	52.2	95.9	9.6	49.3	58.9	53.3	101.5	154.8
1959	26.9	35.6	62.5	10.7	48.3	59.0	37.6	83.9	121.5
1960	18.0	48.7	66.7	10.7	51.2	61.9	28.7	99.9	128.6
Electrical apparatus and supplies.....1958	7.3	21.8	29.1	2.9	14.0	16.9	10.2	35.8	46.0
1959	7.5	22.2	29.7	3.0	14.6	17.6	10.5	36.8	47.3
1960	7.3	30.6	37.9	3.1	14.8	17.9	10.4	45.4	55.8
Non-metallic mineral products.....1958	14.4	25.9	40.3	2.9	32.2	35.1	17.3	58.1	75.4
1959	25.4	44.0	69.4	4.2	37.0	41.2	29.6	81.0	110.6
1960	12.6	34.0	46.6	3.3	36.1	39.4	15.9	70.1	86.0
Products of petroleum and coal.....1958	136.0	7.3	143.3	23.4	6.2	29.6	159.4	13.5	172.9
1959	105.1	11.7	116.8	22.6	5.2	27.8	127.7	16.9	144.6
1960	95.9	6.5	102.4	22.5	5.1	27.6	118.4	11.6	130.0

4.—Capital and Repair Expenditures for Certain Economic Sectors, 1958-60—continued

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Con- struction	Ma- chinery and Equip- ment	Total	Con- struction	Ma- chinery and Equip- ment	Total	Con- struction	Ma- chinery and Equip- ment	Total
MANUFACTURING—concluded									
Chemical products.....1958	43.1	73.5	116.6	9.2	41.9	51.1	52.3	115.4	167.7
1959	24.4	49.7	74.1	10.2	42.4	52.6	34.6	92.1	126.7
1960	34.0	86.6	120.6	9.6	45.8	55.4	43.6	132.4	176.0
Miscellaneous.....1958	2.7	9.3	12.0	1.4	3.9	5.3	4.1	13.2	17.3
1959	4.7	10.9	15.6	1.6	4.0	5.6	6.3	14.9	21.2
1960	4.3	9.7	14.0	1.7	4.2	5.9	6.0	13.9	19.9
Capital items charged to operating expenses.....1958	—	105.4	105.4	—	—	—	—	105.4	105.4
1959	—	109.4	109.4	—	—	—	—	109.4	109.4
1960	—	120.9	120.9	—	—	—	—	120.9	120.9
Totals, Manufacturing...1958	397.6	697.4	1,095.0	109.3	462.1	571.9	597.4	1,159.5	1,666.9
1959	358.0	716.1	1,074.1	116.5	487.0	603.5	474.5	1,203.1	1,677.6
1960	355.7	840.5	1,196.2	114.5	488.7	604.2	470.2	1,330.2	1,800.4
UTILITIES									
Electric power.....1958	496.3	183.9	680.2	40.2	27.0	67.2	536.5	210.9	747.4
1959	432.6	187.0	619.6	43.3	25.5	68.8	475.9	212.5	688.4
1960	413.1	187.9	601.0	46.3	27.3	73.6	459.4	215.2	674.6
Gas distribution.....1958	74.1	5.2	79.3	3.8	2.4	6.2	77.9	7.6	85.5
1959	75.0	8.4	83.4	5.8	1.7	7.5	80.8	10.1	90.9
1960	70.3	9.2	79.5	6.1	1.9	8.0	76.4	11.1	87.5
Railway transport and telegraphs.....1958	182.6	175.6	358.2	145.5	180.3	325.8	328.1	355.9	684.0
1959	239.3	129.7	369.0	169.4	181.7	351.1	398.7	311.4	710.1
1960	209.2	104.4	313.6	170.7	170.5	341.2	379.9	274.9	654.8
Urban transit.....1958	3.4	13.5	16.9	4.5	17.8	22.3	7.9	31.3	39.2
1959	4.6	12.9	17.5	4.0	17.6	21.6	8.6	30.5	39.1
1960	20.7	6.6	27.3	4.0	17.9	21.9	24.7	24.5	49.2
Water transport and services.1958	132.5	35.5	168.0	3.4	17.2	20.6	135.9	52.7	188.6
1959	47.6	32.4	80.0	3.5	15.6	19.1	51.1	48.0	99.1
1960	44.6	44.1	88.7	4.7	15.5	20.2	49.3	59.6	108.9
Motor transport.....1958	1.9	31.1	33.0	0.8	36.5	37.3	2.7	67.6	70.3
1959	3.7	40.4	44.1	1.0	39.6	40.6	4.7	80.0	84.7
1960	4.0	36.8	40.8	1.0	40.0	41.0	5.0	76.8	81.8
Grain elevators.....1958	10.0	1.6	11.6	5.1	2.2	7.3	15.1	3.8	18.9
1959	16.7	7.4	24.1	4.7	2.2	6.9	21.4	9.6	31.0
1960	6.8	2.3	9.1	4.2	2.0	6.2	11.0	4.3	15.3
Telephones.....1958	126.7	202.9	329.6	26.1	78.1	104.2	152.8	281.0	433.8
1959	134.6	181.4	316.0	25.3	88.4	113.7	159.9	269.8	429.7
1960	146.3	197.6	343.9	27.4	94.8	122.2	173.7	292.4	466.1
Broadcasting.....1958	2.2	7.1	9.3	0.4	2.4	2.8	2.6	9.5	12.1
1959	4.4	8.3	12.7	0.7	2.4	3.1	5.1	10.7	15.8
1960	3.8	7.9	11.7	0.5	2.8	3.3	4.3	10.7	15.0
Municipal waterworks.....1958	75.9	4.2	80.1	14.7	1.6	16.3	90.6	5.8	96.4
1959	84.4	4.8	89.2	13.9	1.5	15.4	98.3	6.3	104.6
1960	96.8	7.2	104.0	14.8	1.6	16.4	111.6	8.8	120.4
Other utilities ¹.....1958	299.1	72.4	371.5	5.6	34.2	39.8	304.7	106.6	411.3
1959	114.9	63.3	178.2	5.4	40.7	46.1	120.3	104.0	224.3
1960	119.2	81.7	200.9	5.7	45.8	51.5	124.9	127.5	252.4

¹ Includes air transport, warehousing and oil and gas pipelines.

4.—Capital and Repair Expenditures for Certain Economic Sectors, 1958-60—concluded

Type of Enterprise and Year	Capital			Repair			Capital and Repair		
	Con- struc- tion	Ma- chinery and Equip- ment	Total	Con- struc- tion	Ma- chinery and Equip- ment	Total	Con- struc- tion	Ma- chinery and Equip- ment	Total
UTILITIES—concluded									
Capital items charged to operating expenses.....1958	—	14.7	14.7	—	—	—	—	14.7	14.7
1959	—	14.2	14.2	—	—	—	—	14.2	14.2
1960	—	14.4	14.4	—	—	—	—	14.4	14.4
Totals, Utilities.....1958	1,404.7	747.7	2,152.4	250.1	399.7	649.8	1,654.8	1,147.4	2,802.2
1959	1,157.8	690.2	1,848.0	267.0	416.9	683.9	1,424.8	1,107.1	2,531.9
1960	1,134.8	700.1	1,834.9	285.4	420.1	705.5	1,420.2	1,120.2	2,540.4
TRADE									
Wholesale.....1958	23.4	22.6	46.0	4.4	6.5	10.9	27.8	29.1	56.9
1959	23.1	24.1	47.2	4.6	7.0	11.6	27.7	31.1	58.8
1960	28.9	22.8	51.7	4.3	7.1	11.4	33.2	29.9	63.1
Chain stores.....1958	43.1	31.6	74.7	4.0	4.1	9.0	48.0	35.7	83.7
1959	32.4	30.5	62.9	4.7	4.4	9.1	37.1	34.9	72.0
1960	36.3	34.4	70.7	4.3	4.4	8.7	40.6	38.8	79.4
Independent stores.....1958	75.4	56.5	131.9	12.1	9.3	21.4	87.5	65.8	153.3
1959	57.7	53.3	111.0	10.4	9.5	19.9	68.1	62.8	130.9
1960	62.6	60.8	123.4	10.3	9.6	19.9	72.9	70.4	143.3
Department stores.....1958	13.2	7.1	20.3	4.7	3.0	7.7	17.9	10.1	28.0
1959	14.0	6.6	20.6	4.0	3.3	7.3	18.0	9.9	27.9
1960	16.3	12.1	28.4	3.6	3.4	7.0	19.9	15.5	35.4
Automotive trade.....1958	39.8	28.5	68.3	8.7	10.2	18.9	48.5	38.7	87.2
1959	46.7	30.1	76.8	8.3	9.5	17.8	55.0	39.6	94.6
1960	42.8	31.5	74.3	8.0	9.0	17.0	50.8	40.5	91.3
Capital items charged to operating expenses.....1958	—	14.4	14.4	—	—	—	—	14.4	14.4
1959	—	14.3	14.3	—	—	—	—	14.3	14.3
1960	—	15.6	15.6	—	—	—	—	15.6	15.6
Totals, Trade.....1958	194.9	160.7	355.6	34.8	33.1	67.9	229.7	193.8	423.5
1959	173.9	158.9	332.8	32.0	33.7	65.7	205.9	192.6	398.5
1960	186.9	177.2	364.1	30.5	33.5	64.0	217.4	210.7	428.1
INSTITUTIONS									
Churches.....1958	55.0	3.4	58.4	7.9	0.4	8.3	62.9	3.8	66.7
1959	53.0	2.8	55.8	8.2	0.6	8.8	61.2	3.4	64.6
1960	50.9	3.1	54.0	7.2	0.6	7.8	58.1	3.7	61.8
Universities.....1958	55.7	7.6	63.3	5.0	0.3	5.3	60.7	7.9	68.6
1959	72.2	8.8	81.0	4.3	0.5	4.8	76.5	9.3	85.8
1960	88.3	11.0	99.3	4.3	1.0	5.3	92.6	12.0	104.6
Schools.....1958	201.9	20.8	222.7	21.6	3.4	25.0	223.5	24.2	247.7
1959	213.8	22.4	236.2	24.9	3.6	28.5	238.7	26.0	264.7
1960	232.0	23.3	255.3	26.6	4.7	31.3	258.6	28.0	286.6
Hospitals.....1958	136.1	25.4	161.5	13.8	3.9	17.7	149.9	29.3	179.2
1959	126.0	23.4	149.4	16.0	4.5	20.5	142.0	27.9	169.9
1960	172.9	28.5	201.4	15.3	4.5	19.8	188.2	33.0	221.2
Other institutional services.....1958	8.6	0.2	8.8	0.9	0.1	1.0	9.5	0.3	9.8
1959	8.3	0.5	8.8	0.8	0.1	0.9	9.1	0.6	9.7
1960	14.6	0.7	15.3	0.8	0.1	0.9	15.4	0.8	16.2
Totals, Institutions.....1958	457.3	57.4	514.7	49.2	8.1	57.3	506.5	65.5	572.0
1959	473.3	57.9	531.2	54.2	9.3	63.5	527.5	67.2	594.7
1960	558.7	66.6	625.3	54.2	10.9	65.1	612.9	77.5	690.4

A summary of the capital expenditures in each province for the years 1958-60 is given in Table 5. Such expenditures represent gross additions to the capital stock of the province and are a reflection of economic activity in that area, but the actual production of these assets may generate its major employment in income-giving effects in other regions. For example, the spending of millions of dollars on oil refineries and pipelines in Western Canada means activity in the steel industries of Ontario as well as construction activity in the Prairie Provinces.

5.—Capital and Repair Expenditures, by Province, 1958-60

NOTE.—Actual expenditures 1958; preliminary actual 1959; intentions 1960.

(Millions of dollars)

Province and Year	Capital			Repair			Capital and Repair		
	Con- struction	Ma- chinery and Equip- ment	Total	Con- struction	Ma- chinery and Equip- ment	Total	Con- struction	Ma- chinery and Equip- ment	Total
Newfoundland.....1958	80	27	107	16	13	29	96	40	136
.....1959	78	30	108	18	13	31	96	43	139
.....1960	84	26	110	18	14	32	102	40	142
Prince Edward Island.....1958	16	14	30	4	5	9	20	19	39
.....1959	24	12	36	4	4	8	28	16	44
.....1960	22	10	32	4	4	8	26	14	40
Nova Scotia.....1958	120	65	185	40	34	74	160	99	259
.....1959	141	65	206	44	34	78	185	99	284
.....1960	153	66	219	45	35	80	198	101	299
New Brunswick.....1958	132	50	182	34	31	65	166	81	247
.....1959	149	62	211	41	33	74	190	95	285
.....1960	143	58	201	42	32	74	185	90	275
Quebec.....1958	1,437	617	2,054	295	346	641	1,732	963	2,695
.....1959	1,509	621	2,130	314	354	668	1,823	975	2,798
.....1960	1,448	681	2,129	329	358	687	1,777	1,039	2,816
Ontario.....1958	2,144	960	3,104	454	522	976	2,598	1,482	4,080
.....1959	1,954	968	2,922	468	564	1,032	2,422	1,532	3,954
.....1960	2,063	1,073	3,136	483	564	1,047	2,546	1,637	4,183
Manitoba.....1958	275	134	409	70	71	141	345	205	550
.....1959	331	158	489	79	69	148	410	227	637
.....1960	316	159	475	84	70	154	400	229	629
Saskatchewan.....1958	307	170	477	76	70	146	383	240	623
.....1959	264	194	458	78	76	154	342	270	612
.....1960	298	172	470	81	77	158	379	249	628
Alberta.....1958	655	235	890	131	107	238	786	342	1,128
.....1959	676	260	936	141	117	258	817	377	1,194
.....1960	737	279	1,016	141	123	264	878	402	1,280
British Columbia ¹.....1958	663	262	925	141	154	295	804	416	1,220
.....1959	671	246	917	144	156	300	815	402	1,217
.....1960	675	304	979	149	162	311	824	466	1,290
Canada ².....1958	5,829	2,534	8,363	1,261	1,353	2,614	7,090	3,887	10,977
.....1959	5,797	2,616	8,413	1,331	1,420	2,751	7,128	4,036	11,164
.....1960	5,939	2,828	8,767	1,376	1,439	2,815	7,315	4,267	11,582

¹ Includes the Yukon and Northwest Territories.
Table 3 are due to rounding of figures.

² Slight differences in totals from those shown in

Section 2.—The Construction Industry

Subsection 1.—Value of Construction Work Performed

Statistics of the construction industry are based largely on information received at the same time and from the same sources as the data on capital expenditures which appear in Section 1.* The data represent the estimated total value of all new and repair construction performed by contractors; labour forces of utility, manufacturing, mining and logging firms; and by government departments, home-owner builders and other persons or firms not primarily engaged in the construction industry.

Canada's construction program for 1959 is estimated at \$7,129,000,000, slightly above the 1958 total. Repair construction, estimated to be about \$37,000,000 higher than in 1958, more than accounted for the advance; the value of new construction was lower by about \$33,000,000.

* An explanation of sources and methods is given in DBS annual report *Construction in Canada* (Catalogue No. 64-201).

6.—Value of New and Repair Construction Work Performed, 1950-59

NOTE.—Actual expenditures 1950-58; preliminary actual 1959.

Year	New	Repair	Total	Total Construction as Percentage of Gross National Product
	\$'000,000	\$'000,000	\$'000,000	p.c.
1950.....	2,453	827	3,280	18.2
1951.....	2,871	987	3,858	18.2
1952.....	3,434	1,010	4,444	18.5
1953.....	3,756	1,070	4,826	19.3
1954.....	3,737	1,105	4,842	19.5
1955.....	4,167	1,141	5,308	19.6
1956.....	5,272	1,182	6,454	21.4
1957.....	5,785	1,238	7,023	22.3
1958.....	5,831	1,261	7,092	21.8
1959.....	5,798	1,331	7,129	20.6

Table 7, which compares contract construction with other construction, shows that contractors account for from 76 p.c. to 79 p.c. of the work each year.

7.—Value of Construction Work Performed, by Contractors and Others, 1956-59

NOTE.—Actual expenditures 1956 to 1958; preliminary actual 1959.

(Millions of dollars)

Item	1956	1957	1958	1959
Contract Construction.....	4,839	5,321	5,441	5,480
New.....	4,319	4,770	4,844	4,838
Repair.....	520	551	597	642
Other Construction¹.....	1,615	1,702	1,651	1,649
New.....	953	1,015	987	960
Repair.....	662	687	664	689
Totals, Construction.....	6,454	7,023	7,092	7,129
New.....	5,272	5,785	5,831	5,798
Repair.....	1,182	1,238	1,261	1,331

¹ Work done by the labour forces of utility, manufacturing, mining and logging firms and by government departments, home-owner builders and other persons or firms not primarily engaged in the construction industry.

8.—Value of Construction Work Performed, by Principal Type, 1956-59

NOTE.—Actual expenditures 1956-58; preliminary actual 1959.

(Millions of dollars)

Type of Construction	1956		1957		1958		1959	
	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total
Building Construction	3,890	60.3	3,886	55.3	4,102	57.8	4,254	59.7
Residential.....	1,902	29.5	1,813	25.8	2,189	30.9	2,190	30.7
Industrial.....	604	9.4	611	8.7	396	5.5	412	5.8
Commercial.....	571	8.8	656	9.3	689	9.7	760	10.7
Institutional.....	455	7.0	519	7.4	550	7.8	571	8.0
Other building.....	358	5.6	287	4.1	278	3.9	321	4.5
Engineering Construction	2,564	39.7	3,137	44.7	2,990	42.2	2,875	40.3
Marine construction.....	118	1.8	158	2.2	155	2.2	114	1.6
Road, highway and aerodrome construction.....	618	9.6	709	10.1	712	10.0	789	11.1
Waterworks and sewage systems.....	184	2.9	200	2.8	198	2.8	217	3.0
Dams and irrigation.....	68	1.1	86	1.2	50	0.7	45	0.6
Electric power construction.....	455	7.0	508	7.2	501	7.1	447	6.3
Railway, telephone and telegraph construction.....	363	5.6	405	5.8	401	5.7	459	6.4
Gas and oil facilities.....	531	8.2	741	10.7	650	9.2	461	6.5
Other engineering.....	227	3.5	330	4.7	323	4.5	343	4.8
Totals, All Construction	6,454	100.0	7,023	100.0	7,092	100.0	7,129	100.0

Recent shifts within the program of construction are shown in Table 9.

9.—Dollar Change in Value of Construction Work Performed, by Type of Structure, 1957 to 1958, and 1958 to 1959

Type of Structure	Change 1957 to 1958	Change 1958 to 1959	Type of Structure	Change 1957 to 1958	Change 1958 to 1959
	\$'000,000	\$'000,000		\$'000,000	\$'000,000
Building Construction			Building Construction—concl.		
Residential	376	1	Institutional	31	21
Dwellings, single, double, duplexes and apartments.....	376	1	Schools and other educational buildings.....	21	20
Industrial	-215	16	Churches and other religious buildings.....	4	10
Factories, plants, workshops, food canneries.....	-126	14	Hospitals, sanatoria, clinics, first-aid stations, etc.....	20	-4
Mine and mine mill buildings.....	-92	2	Other institutional buildings.....	-15	-4
Railway stations, offices, roadway buildings.....	2	1	Other Building	-9	42
Railway shops, engine houses, water and fuel stations.....	1	-1	Farm buildings (excluding dwellings).....	15	19
Commercial	33	71	Broadcasting, radio and television, relay and booster stations, telephone exchanges.....	-12	3
Warehouses, storehouses, refrigerated storage, etc.....	-17	-3	Aircraft hangars.....	-6	14
Grain elevators.....	6	2	Passenger terminals, bus, boat or air.....	4	2
Hotels, clubs, restaurants, cafeterias, tourist cabins.....	-17	1	Armouries, barracks, drill halls, etc.....	-3	1
Office buildings.....	40	49	Bunkhouses, dormitories, camp cookeries and camps.....	-5	3
Stores, retail and wholesale.....	32	13	Miscellaneous building.....	-2	2
Garages and service stations.....	-11	5			
Theatres, arenas, amusement and recreational buildings.....	-4	6	Totals, Building Construction	215	152
Laundries and dry-cleaning establishments.....	3	-3			

9.—Dollar Change in Value of Construction Work Performed, by Type of Structure, 1957 to 1958, and 1958 to 1959—concluded

Type of Structure	Change 1957 to 1958	Change 1958 to 1959	Type of Structure	Change 1957 to 1958	Change 1958 to 1959
\$'000,000	\$'000,000		\$'000,000	\$'000,000	
Engineering Construction			Engineering Construction— concluded		
Marine	-3	-41	Railway, Telephone and Tele- graph	-4	57
Docks, wharves, piers, break- waters.....	18	3	Railway tracks and roadbed....	-1	20
Retaining walls, embankments, riprapping.....	—	1	Signals and interlockers.....	-5	6
Canals and waterways.....	-37	-27	Telegraph and telephone lines, underground and marine cables	2	31
Dredging and pile driving.....	28	-19			
Dykes.....	—	1	Gas and Oil Facilities	-90	-189
Logging booms.....	-1	—	Gas mains and services.....	1	14
Other marine.....	-11	—	Pumping stations, oil.....	-10	—1
Road, Highway and Aerodrome	3	77	Pumping stations, gas.....	8	-8
Hard surfaced or paved streets, highways, parking lots, etc....	63	64	Oil storage tanks.....	-6	-1
Gravel or stone streets, high- ways, roads, parking lots, etc....	-41	1	Gas storage tanks.....	2	-3
Dirt, clay or other streets, roads, parking lots, etc.....	-10	13	Oil pipelines.....	-31	-9
Grading, scraping, oiling, filling..	-9	-4	Gas pipelines.....	-22	-166
Sidewalks, paths.....	2	-1	Oil wells.....	-38	2
Aerodromes, landing fields, run- ways, tarmac.....	-2	5	Gas wells.....	6	13
Waterworks and Sewage Systems	-3	19	Oil refinery—processing units....	—	-17
Tile drains, drainage ditches, storm sewers.....	-2	-8	Natural gas cleaning plants.....	—	-12
Water mains, hydrants and serv- ices.....	-5	7	Other Engineering	-7	20
Sewage systems and connections.	3	16	Bridges, trestles, culverts, over- passes, viaducts.....	20	34
Pumping stations, water.....	-2	8	Tunnels and subways.....	-17	-8
Water storage tanks.....	3	-3	Incinerators.....	1	—
Dams and Irrigation	-36	-5	Park systems, landscaping, sod- ding, etc.....	3	1
Dams and reservoirs.....	-35	-7	Swimming pools, tennis courts, outdoor recreation facilities...	1	1
Irrigation and land reclamation projects.....	-1	2	Mine shafts and other below- surface workings.....	-19	-9
Electric Power	-6	-54	Fences, snowsheds, signs, guard- rails.....	-2	2
Electric power generating plants, including water conveying and controlling structures.....	-25	-32	Miscellaneous engineering con- struction.....	7	—
Electric transformer stations....	8	—	Totals, Engineering Construc- tion	-146	-116
Power transmission and distribu- tion lines, trolley wires.....	7	-23			
Street lighting.....	3	2	Totals, All Construction	69	36

Table 10 gives estimates of total expenditures in Canada on each type of construction for which information is available. It contains the detailed data from which Tables 8 and 9 are derived.

10.—Value of Construction Work Performed, by Type of Structure, 1957-59

NOTE.—Actual expenditures 1957-58; preliminary actual 1959.

Type of Structure	1957			1958			1959		
	New	Repair	Total	New	Repair	Total	New	Repair	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Building Construction									
Residential	1,430,000	383,000	1,813,000	1,782,000	407,000	2,189,000	1,758,600	431,000	2,189,600
Dwellings, single, double, duplexes and apartments	1,430,000	383,000	1,813,000	1,782,000	407,000	2,189,000	1,758,600	431,000	2,189,600
Industrial	493,545	117,125	610,670	287,070	168,433	395,503	297,027	114,777	411,804
Factories, plants, work- shops, food canneries....	355,454	87,619	443,073	236,591	80,959	317,550	245,637	86,378	332,015
Mine and mine mill buildings.....	120,507	7,283	127,790	28,983	6,763	35,746	30,505	7,257	37,762

10.—Value of Construction Work Performed, by Type of Structure, 1957-59—continued

Type of Structure	1957			1958			1959		
	New	Repair	Total	New	Repair	Total	New	Repair	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Building Construction —concluded									
Industrial—concluded									
Railway stations, offices, roadway buildings.....	10,056	12,663	22,719	12,492	12,107	24,599	12,035	12,586	25,521
Railway shops, engine houses, water and fuel stations.....	7,528	9,560	17,088	9,004	8,604	17,608	7,950	8,556	16,506
Commercial.....	560,009	96,187	656,196	589,459	99,304	688,763	663,565	96,684	760,249
Warehouses, storehouses, refrigerated storage, etc	78,162	12,737	90,899	62,306	11,614	73,920	60,151	10,414	70,565
Grain elevators.....	13,355	6,421	19,776	19,794	6,121	25,915	21,846	6,292	28,138
Hotels, clubs, restaur- ants, cafeterias, tourist cabins.....	53,689	13,704	67,393	36,257	14,156	50,413	38,376	13,126	51,502
Office buildings.....	193,454	30,199	223,653	232,117	31,625	263,742	279,922	33,003	312,925
Stores, retail and whole- sale.....	144,261	20,985	165,246	173,139	24,256	197,395	188,712	22,163	210,875
Garages and service sta- tions.....	50,784	8,507	59,291	40,508	7,400	47,908	45,543	7,811	53,354
Theatres, arenas, amuse- ment and recreational buildings.....	24,926	2,758	27,684	20,881	3,210	24,091	27,511	2,937	30,448
Laundries and dry-clean- ing establishments.....	1,378	876	2,254	4,457	922	5,379	1,504	938	2,442
Institutional.....	464,558	54,633	519,191	492,712	57,322	550,034	510,771	60,590	571,361
Schools and other educa- tional buildings.....	259,984	25,001	284,985	277,602	28,528	306,130	295,870	30,150	326,020
Churches and other reli- gious buildings.....	40,655	8,053	48,708	45,601	7,475	53,076	54,884	8,374	63,258
Hospitals, sanatoria, clin- ics, first-aid stations, etc.....	121,008	15,641	136,649	142,716	14,175	156,891	135,078	17,407	152,485
Other institutional buildings.....	42,911	5,938	48,849	26,793	7,144	33,937	24,939	4,659	29,598
Other Building.....	202,934	84,534	287,468	186,325	92,126	278,451	223,023	97,769	320,792
Farm buildings (exclud- ing dwellings).....	86,484	60,292	146,776	95,856	65,850	161,706	107,344	73,093	180,437
Broadcasting, radio and television, relay and booster stations, tele- phone exchanges.....	50,886	2,222	53,108	38,783	2,235	41,018	41,378	2,243	43,621
Aeroplane hangars.....	9,377	2,839	12,216	3,587	2,425	6,012	17,305	2,509	19,814
Passenger terminals, bus, boat or air.....	7,195	543	7,738	12,117	103	12,220	13,686	249	13,935
Armouries, barracks, drill halls, etc.....	14,970	12,209	27,179	10,107	14,006	24,113	11,949	13,178	25,127
Bunkhouses, dormitories, camp cookeries, bush depots and camps.....	17,192	5,005	22,197	12,694	4,006	16,700	15,606	3,736	19,342
Miscellaneous building..	16,830	1,424	18,254	13,181	3,501	16,682	15,755	2,761	18,516
Totals, Building Con- struction.....	3,151,046	735,479	3,886,525	3,337,566	764,185	4,101,751	3,452,986	800,820	4,253,996
Engineering Construction									
Marine.....	145,270	12,888	158,158	139,667	15,165	155,032	98,880	14,857	113,737
Docks, wharves, piers, breakwaters.....	36,301	6,830	43,131	53,549	7,269	60,818	57,065	6,810	63,875
Retaining walls, em- bankments, riprapping..	1,361	775	2,136	1,939	480	2,419	2,681	380	3,061
Canals and waterways..	72,593	1,231	73,824	34,933	1,424	36,357	8,091	1,125	9,216
Dredging and pile driv- ing.....	19,244	1,661	20,905	44,617	4,451	49,068	24,950	5,392	30,342

10.—Value of Construction Work Performed, by Type of Structure, 1957-59—continued

Type of Structure	1957			1958			1959		
	New	Repair	Total	New	Repair	Total	New	Repair	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Engineering Construction—continued									
Marine—concluded									
Dykes.....	1,273	113	1,386	1,307	189	1,496	1,858	174	2,032
Logging booms.....	798	996	1,794	234	867	1,101	326	721	1,047
Other marine.....	13,700	1,282	14,982	3,288	485	3,773	3,909	255	4,164
Road, Highway and Aerodrome.....	550,127	158,653	708,780	543,469	168,385	711,854	605,501	183,468	788,969
Hard surfaced or paved streets, highways, parking lots, etc.....	303,105	58,681	361,786	357,902	66,798	424,700	398,968	89,615	488,583
Gravel or stone streets, highways, roads, parking lots, etc.....	141,952	68,823	210,775	94,372	75,281	169,653	101,952	68,521	170,473
Dirt, clay or other streets, roads, parking lots, etc.....	35,026	22,786	57,812	30,561	17,364	47,925	44,182	16,961	61,143
Grading, scraping, oiling, filling.....	25,202	4,048	29,250	17,544	2,380	19,924	13,012	2,616	15,628
Sidewalks, paths.....	14,261	3,306	17,567	15,591	3,972	19,563	15,397	3,139	18,536
Aerodromes, landing fields, runways, tarmac	30,581	1,009	31,590	27,499	2,590	30,089	31,990	2,616	34,606
Waterworks and Sewage	172,391	27,717	200,108	169,520	28,026	197,546	185,134	31,672	216,806
Tile drains, drainage ditches, storm sewers.	19,630	3,957	23,587	16,754	4,647	21,401	6,832	6,513	13,345
Water mains, hydrants and services.....	61,514	15,309	76,823	58,013	14,307	72,320	66,493	12,344	78,837
Sewage systems and connections.....	81,005	7,127	88,132	83,733	7,506	91,239	97,497	9,607	107,104
Pumping stations, water.	7,978	1,172	9,150	5,784	1,192	6,976	11,445	3,114	14,559
Water storage tanks.....	2,264	152	2,416	5,236	374	5,610	2,867	94	2,961
Dams and Irrigation...	80,911	5,021	85,932	42,989	7,180	50,169	36,911	8,174	45,085
Dams and reservoirs....	68,457	2,458	70,915	32,707	2,988	35,693	25,855	3,242	29,097
Irrigation and land reclamation projects.....	12,454	2,563	15,017	10,282	4,194	14,476	11,056	4,932	15,988
Electric Power.....	463,028	44,526	507,554	457,241	43,975	501,216	399,587	47,763	447,350
Electric power generating plants, including water conveying and controlling structures..	244,444	10,183	254,627	221,091	8,834	229,925	188,347	9,430	197,777
Electric transformer stations.....	40,310	5,161	45,471	47,849	5,613	53,462	45,958	7,018	52,976
Power transmission and distribution lines, trolley wires.....	171,219	25,809	197,028	178,987	25,358	204,345	154,547	27,006	181,553
Street lighting.....	7,055	3,373	10,428	9,314	4,170	13,484	10,735	4,309	15,044
Railway, Telephone and Telegraph.....	244,756	160,680	405,436	249,790	151,610	401,400	300,634	158,096	458,730
Railway tracks and roadbed.....	141,098	120,069	261,167	145,269	114,589	259,858	164,349	115,719	280,068
Signals and interlockers	5,604	5,717	11,321	2,518	4,084	6,602	6,066	6,443	12,509
Telegraph and telephone lines, underground and marine cables.....	98,054	34,894	132,948	102,003	32,937	134,940	130,219	35,934	166,153
Gas and Oil Facilities..	699,841	40,640	740,481	611,099	39,434	650,524	421,438	39,917	461,355
Gas mains and services.	58,975	2,811	61,786	60,420	2,527	62,947	71,567	5,067	76,634
Pumping stations, oil...	13,622	1,680	15,302	4,015	1,088	5,103	2,456	1,429	3,885
Pumping stations, gas...	16,732	52	16,844	24,719	222	24,941	16,390	262	16,652
Oil storage tanks.....	25,162	3,171	28,333	19,734	2,225	21,959	18,635	2,341	20,976
Gas storage tanks.....	1,629	140	1,769	3,105	360	3,465	322	64	386
Oil pipelines.....	48,590	1,625	50,215	17,625	1,707	19,332	9,171	1,159	10,330
Gas pipelines.....	229,767	1,030	230,797	207,543	1,572	209,115	42,611	659	43,270
Oil wells.....	160,212	5,869	166,081	121,874	6,159	128,033	125,442	4,753	130,195
Gas wells.....	22,667	486	23,143	28,389	654	29,043	40,501	1,340	41,841

10.—Value of Construction Work Performed, by Type of Structure, 1957-59—concluded

Type of Structure	1957			1958			1959		
	New	Repair	Total	New	Repair	Total	New	Repair	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Engineering Construction—concluded									
Gas and Oil Facilities—concluded									
Oil refinery—processing units.....	87,736	23,171	110,907	89,033	22,236	111,269	72,183	21,648	93,831
Natural gas cleaning plants.....	34,699	605	35,304	34,633	684	35,317	22,160	1,195	23,355
Other Engineering.....	277,207	52,877	330,084	279,793	43,196	322,989	296,410	46,337	342,747
Bridges, trestles, culverts, overpasses, viaducts.....	139,726	28,377	168,103	167,379	20,261	187,640	198,815	23,004	221,819
Tunnels and subways...	53,243	376	53,619	36,984	126	37,110	28,636	166	28,802
Incinerators.....	853	104	957	636	1,234	1,870	1,448	394	1,842
Park systems, landscaping, sodding, etc.....	3,599	2,751	6,350	5,790	3,264	9,054	7,553	2,397	9,950
Swimming pools, tennis courts, outdoor recreation facilities.....	1,927	618	2,545	2,444	894	3,338	3,164	1,072	4,236
Mine shafts and other below surface workings...	52,366	2,989	55,355	33,126	2,732	35,858	23,217	3,162	26,379
Fences, snowsheds, signs, guard rails.....	8,875	9,951	18,826	9,008	7,877	16,885	10,272	8,157	18,429
Miscellaneous engineering.....	16,618	7,711	24,329	24,426	6,808	31,234	23,305	7,985	31,290 *
Totals, Engineering Construction.....	2,633,531	503,002	3,136,533	2,493,759	496,971	2,990,730	2,344,495	530,284	2,874,779
Totals, All Construction.....	5,784,577	1,238,481	7,023,058	5,831,325	1,261,156	7,092,481	5,797,481	1,331,104	7,128,585

Principal statistics of the construction industry are shown by province and for contractors, utilities, governments and others in Table 11. The statistics given for Canada as a whole may be considered as relatively accurate but those for individual provinces and by class of builder are approximations only. All estimates given for cost of materials used are based on ratios of this item to total value of work performed, derived from annual surveys of construction work and applied to the total value-of-work figures. Estimates of labour content are similarly based but, in addition, are adjusted to include working owners and partners and their withdrawals. Although the ratios were calculated in some detail by type of industry, still further refinements are required. There are also some difficulties in obtaining the precise location of projects undertaken or to be undertaken by large companies operating in a number of provinces. However, if used with these qualifications in mind, the table provides useful estimates.

11.—Labour Content, Cost of Materials and Value of Work Performed in Construction, by Province and by Employer, 1955-59

NOTE.—Actual expenditures 1955-58; preliminary actual 1959.

Province and Year		Labour Content		Cost of Materials Used	Value of Work Performed
		Number	Value		
Province			\$'000	\$'000	\$'000
Newfoundland.....	1955	10,022	28,324	35,710	77,459
	1956	11,155	35,308	32,623	83,200
	1957	9,875	32,377	43,113	90,393
	1958	9,226	30,999	41,504	95,682
	1959	10,255	30,858	37,529	95,829
Prince Edward Island.....	1955	2,418	5,359	7,249	17,179
	1956	2,260	6,473	9,118	19,300
	1957	1,769	5,512	7,299	17,095
	1958	2,070	5,842	9,664	20,498
	1959	2,588	7,462	12,970	28,013

**11.—Labour Content, Cost of Materials and Value of Work Performed in Construction,
by Province and by Employer, 1955-59—continued**

Province and Year	Labour Content		Cost of Materials Used	Value of Work Performed
	Number	Value		
		\$'000	\$'000	\$'000
Province—concluded				
Nova Scotia.....1955	17,984	48,251	70,253	142,128
.....1956	19,649	57,213	77,681	162,100
.....1957	20,087	59,954	76,580	164,878
.....1958	19,446	57,766	72,854	159,690
.....1959	20,555	65,797	84,082	185,100
New Brunswick.....1955	19,506	52,163	73,324	153,729
.....1956	20,317	58,248	90,451	168,900
.....1957	16,836	52,082	68,353	143,958
.....1958	16,644	53,135	87,468	165,880
.....1959	18,599	59,082	99,196	189,118
Quebec.....1955	132,622	420,018	653,194	1,307,193
.....1956	148,243	493,979	784,619	1,545,700
.....1957	146,727	528,953	836,203	1,661,552
.....1958	144,405	537,707	890,149	1,732,647
.....1959	143,709	568,862	940,083	1,822,620
Ontario.....1955	187,783	650,244	897,989	1,867,835
.....1956	197,092	738,484	1,072,506	2,189,600
.....1957	207,945	847,896	1,197,947	2,507,011
.....1958	214,006	896,629	1,203,999	2,598,625
.....1959	197,545	844,496	1,133,906	2,422,492
Manitoba.....1955	29,266	90,648	123,739	257,333
.....1956	31,459	105,019	148,490	307,500
.....1957	27,246	100,496	160,366	327,306
.....1958	29,495	112,424	163,746	345,293
.....1959	32,778	132,590	188,453	410,450
Saskatchewan.....1955	27,547	91,646	131,228	280,315
.....1956	29,755	110,204	169,595	367,000
.....1957	27,773	107,446	157,370	353,560
.....1958	28,950	114,656	192,193	383,344
.....1959	24,526	102,556	175,096	342,513
Alberta.....1955	52,617	187,178	284,360	623,305
.....1956	60,174	225,670	325,543	731,700
.....1957	57,866	223,460	292,052	707,005
.....1958	57,141	229,400	355,157	787,336
.....1959	56,502	238,873	367,828	817,081
British Columbia.....1955	54,038	212,723	262,737	581,753
.....1956	71,879	306,551	402,195	878,600
.....1957	74,931	351,520	470,403	1,050,300
.....1958	60,600	276,877	356,093	803,486
.....1959	60,934	281,289	362,895	815,369
Totals.....1955	533,803	1,786,554	2,539,783	5,308,229
.....1956	591,963	2,137,149	3,112,821	6,453,600
.....1957	591,055	2,309,696	3,309,686	7,023,058
.....1958	581,992	2,315,435	3,372,827	7,092,481
.....1959	567,991	2,331,865	3,402,038	7,128,585

11.—Labour Content, Cost of Materials and Value of Work Performed in Construction, by Province and by Employer, 1955-59—concluded

Employer and Year	Labour Content		Cost of Materials Used	Value of Work Performed
	Number	Value		
		\$'000	\$'000	\$'000
Employer				
Contractors.....	1955	343,107	1,212,257	3,873,478
	1956	395,115	1,498,959	4,838,950
	1957	397,618	1,634,932	5,321,378
	1958	393,854	1,655,812	5,441,352
	1959	386,254	1,671,934	5,479,516
Utilities.....	1955	75,707	239,877	602,942
	1956	76,601	271,271	699,786
	1957	77,947	286,918	775,261
	1958	72,694	284,921	774,336
	1959	68,840	279,920	760,139
Governments.....	1955	61,176	167,492	361,725
	1956	65,698	191,629	414,271
	1957	59,823	180,697	396,325
	1958	65,806	200,102	398,070
	1959	64,821	204,781	406,603
Others.....	1955	53,813	166,928	470,084
	1956	54,569	175,290	500,593
	1957	55,667	197,149	530,094
	1958	49,638	174,600	478,723
	1959	48,076	175,230	482,327

Subsection 2.—Contracts Awarded and Building Permits Issued

In this Subsection statistics are given of work actually in sight either as contracts awarded or as building permits. These figures are related to those of work performed during the year only so far as the work thus provided for is completed and duly reported in the capital expenditure surveys. Further, values of contracts awarded, and especially of building permits, are estimates (more often under-estimates) of work to be done.

12.—Value of Construction Contracts Awarded, 1924-59

(Source: *Hugh C. MacLean Building Reports*)

Year	Value of Construction Contracts	Year	Value of Construction Contracts	Year	Value of Construction Contracts
	\$		\$		\$
1924.....	276,261,100	1936.....	162,588,000	1948.....	954,082,400
1925.....	297,973,000	1937.....	224,066,700	1949 ¹	1,143,547,300
1926.....	372,947,900	1938.....	187,277,900	1950.....	1,526,784,700
1927.....	418,951,600	1939.....	187,178,500	1951.....	2,295,499,200
1928.....	472,032,600	1940.....	346,009,800	1952.....	1,812,177,600
1929.....	576,651,800	1941.....	393,991,300	1953.....	2,017,060,700
1930.....	456,999,600	1942.....	281,594,100	1954.....	2,154,959,200
1931.....	315,482,000	1943.....	206,103,900	1955.....	3,183,592,000
1932.....	132,872,400	1944.....	291,961,800	1956.....	3,426,905,600
1933.....	97,289,800	1945.....	409,032,700	1957.....	2,894,168,100
1934.....	125,811,500	1946.....	663,355,100	1958.....	3,593,709,200
1935.....	160,305,000	1947.....	718,137,100	1959.....	3,219,073,300

¹ Newfoundland included from Apr. 1, 1949.

13.—Value of Construction Contracts Awarded, by Province and Type of Construction, 1955-59

(SOURCE: *Hugh C. MacLean Building Reports*)

Province or Type of Construction	1955	1956	1957	1958	1959
	\$	\$	\$	\$	\$
Newfoundland.....	39,140,200	41,326,300	34,572,000	35,448,500	62,317,600
Prince Edward Island.....	3,157,600	5,482,600	5,941,700	10,156,200	9,999,600
Nova Scotia.....	55,259,600	51,178,300	54,310,200	105,047,700	109,519,000
New Brunswick.....	100,127,200	62,761,900	55,612,500	141,119,900	70,195,000
Quebec.....	778,843,900	988,138,800	703,724,800	1,042,864,900	913,558,400
Ontario.....	1,300,287,700	1,427,821,300	1,312,420,300	1,489,593,500	1,262,306,000
Manitoba.....	97,164,600	111,526,100	186,583,100	124,936,300	117,779,600
Saskatchewan.....	63,037,200	100,791,700	81,310,200	117,024,800	116,656,500
Alberta.....	230,309,700	275,613,000	179,230,000	257,745,400	274,654,400
British Columbia.....	516,264,300	362,265,500	280,463,300	269,782,000	282,087,200
Totals.....	3,183,592,000	3,426,905,500	2,894,168,100	3,593,709,200	3,219,073,300
Residential.....	1,216,425,100	1,077,408,600	877,710,400	1,413,219,900	1,112,670,700
Apartments.....	179,720,400	160,885,200	192,748,900	344,517,800	274,302,800
Residences.....	1,036,704,700	916,523,400	684,961,500	1,068,702,100	838,367,900
Business.....	761,162,800	828,877,800	795,683,900	1,125,394,400	1,068,818,100
Churches.....	37,759,300	40,584,600	40,685,200	48,624,100	43,713,700
Public garages.....	25,748,900	24,983,100	23,120,000	22,011,700	24,296,100
Hospitals.....	77,604,400	63,320,000	72,138,200	107,918,500	102,286,100
Hotels and clubs.....	93,955,400	66,664,200	55,548,300	72,590,700	83,154,600
Office buildings.....	99,842,900	132,488,900	130,124,600	230,816,500	161,494,800
Public buildings.....	102,191,400	108,245,900	92,490,400	139,151,400	98,373,800
Schools.....	174,686,800	205,232,200	232,539,500	252,131,000	303,325,500
Stores.....	93,939,200	92,316,600	62,614,600	160,094,100	130,686,100
Theatres.....	2,221,800	1,617,000	958,500	10,406,400	439,000
Warehouses.....	53,212,700	93,425,300	85,463,700	81,650,000	121,048,400
Industrial.....	386,410,300	455,579,200	398,378,200	248,764,000	261,023,100
Engineering.....	819,593,800	1,065,039,900	822,395,600	806,330,900	776,561,400
Bridges.....	47,147,300	73,366,500	96,531,700	69,380,100	101,381,400
Marine construction.....	106,319,200	148,134,800	96,968,800	61,649,200	50,042,600
Sewerage and waterworks.....	70,341,900	113,732,900	94,506,500	131,365,000	129,246,200
Roads and streets.....	176,164,600	209,318,200	287,061,400	261,771,600	266,932,300
Power and communications.....	149,696,000	315,651,500	104,665,000	82,664,700	127,363,100
Miscellaneous engineering.....	269,924,800	114,836,000	142,661,600	199,520,300	101,595,800

Building Permits.—The estimated value of proposed construction as indicated by building permits issued in 204 municipalities in 1958 amounted to \$1,621,636,000 as compared with \$1,307,151,000 in 1957 and \$1,318,927,000 in 1956.

14.—Estimated Value of Proposed Construction as Indicated by Building Permits Issued in 204 Municipalities, 1957 and 1958

Province and Municipality	1957	1958	Province and Municipality	1957	1958
	\$'000	\$'000		\$'000	\$'000
Prince Edward Island—			New Brunswick—		
Charlottetown.....	569	3,494	Campbellton.....	239	832
Nova Scotia—			Chatham.....	193	239
Amherst.....	534	886	Dalhousie.....	228	170
Bridgewater.....	220	124	Fredericton.....	3,868	2,903
Dartmouth.....	1,810	2,829	Moncton.....	5,515	7,713
Glace Bay.....	290	614	Newcastle.....	1,186	468
Halifax.....	7,478	12,849	Saint John.....	7,515	2,098
Liverpool.....	192	99	St. Stephen.....	160	34
New Glasgow.....	517	—	Quebec—		
New Waterford.....	140	39	Cap de la Madeleine.....	1,911	2,496
North Sydney.....	193	588	Chicoutimi.....	28,639	5,459
Sydney.....	1,609	3,133	Coteaucook.....	284	279
Sydney Mines.....	67	148	Drummondville.....	1,762	1,179
Truro.....	1,976	661	Granby.....	1,979	2,657
Yarmouth.....	380	221	Grand Mère.....	1,437	1,120

14.—Estimated Value of Proposed Construction as Indicated by Building Permits Issued in 204 Municipalities, 1957 and 1958—continued

Province and Municipality	1957	1958	Province and Municipality	1957	1958
	\$'000	\$'000		\$'000	\$'000
Quebec—concluded			Ontario—concluded		
Hampstead.....	150	163	Kapuskasing.....	528	525
Hull.....	5,740	1,164	Kenora.....	1,132	351
Iberville.....	399	1,070	Kingston.....	9,808	12,654
Joliette.....	1,416	3,688	Kirkland Lake (Teck Twp.).....	508	968
Jonquière.....	1,538	3,327	Kitchener.....	9,229	14,579
Lachine.....	4,421	16,829	Leamington.....	1,237	1,771
Laprairie.....	1,651	489	Leaside.....	911	4,157
La Tuque.....	954	738	Lindsay.....	954	995
Lévis.....	2,073	1,484	Listowel.....	134	180
Longueuil.....	1,007	1,186	London.....	7,345	14,893
Mégantic.....	162	520	Long Branch.....	1,385	1,542
Montreal (Maisonnette).....	129,922	164,608	Napanee.....	211	243
Montreal East.....	3,599	3,499	Nepean Twp.....	4,886	6,262
Montreal North.....	9,213	18,129	New Liskeard.....	730	774
Montreal West.....	2,029	2,142	Newmarket.....	1,254	1,430
Mount Royal.....	3,411	6,557	New Toronto.....	3,637	4,894
Noranda.....	1,086	1,489	Niagara Falls.....	1,123	996
Outremont.....	5,356	3,868	North Bay.....	3,621	2,933
Pointe aux Trembles.....	3,581	7,808	North York Twp.....	76,645	128,892
Pointe Claire.....	6,098	4,955	Oakville.....	2,091	1,632
Quebec.....	15,910	15,267	Orillia.....	1,575	1,677
Rimouski.....	3,598	3,108	Oshawa.....	12,941	15,589
Rivière du Loup.....	668	1,387	Ottawa.....	74,356	88,747
Rouyn.....	1,586	1,345	Owen Sound.....	1,282	1,341
Ste. Agathe des Monts.....	242	1,087	Paris.....	294	424
Ste. Anne de Bellevue.....	514	673	Parry Sound.....	533	1,071
St. Hyacinthe.....	1,170	2,636	Pembroke.....	1,904	1,948
St. Jean.....	4,636	3,650	Perth.....	248	512
St. Jérôme.....	2,086	2,136	Peterborough.....	6,576	8,108
St. Joseph d'Alma.....	1,915	1,825	Petrolia.....	142	295
St. Lambert.....	2,523	2,885	Port Arthur.....	7,104	10,209
St. Laurent.....	16,721	15,149	Port Colborne.....	1,995	1,429
Shawinigan Falls.....	1,449	2,341	Preston.....	1,129	1,339
Sherbrooke.....	3,850	5,561	Renfrew.....	898	328
Sorel.....	1,166	890	Riverside.....	3,164	3,955
Trois Rivières.....	4,751	6,014	St. Catharines.....	4,139	4,889
Val d'Or.....	544	548	St. Mary's.....	1,341	771
Valleyfield.....	4,473	3,480	St. Thomas.....	2,227	1,803
Verdun.....	1,367	2,724	Sarnia.....	6,234	8,497
Westmount.....	5,111	1,500	Sault Ste. Marie.....	7,952	7,917
			Scarborough Twp.....	57,586	72,369
Ontario—			Simcoe.....	1,037	1,434
Amherstburg.....	1,155	488	Smith's Falls.....	584	559
Barrie.....	4,720	4,527	Stratford.....	2,805	2,723
Belleville.....	2,879	1,113	Sudbury.....	3,846	3,532
Bowmanville.....	441	542	Swansea.....	900	1,915
Bracebridge.....	165	542	Tillsonburg.....	910	593
Brampton.....	4,874	4,557	Timmins.....	842	2,154
Brantford.....	6,705	5,330	Toronto.....	120,722	107,910
Brockville.....	3,318	4,333	Trenton.....	1,509	1,628
Burlington.....	2,020	19,857	Wallaceburg.....	921	931
Campbellford.....	121	334	Waterloo.....	2,713	7,606
Chatham.....	2,491	2,734	Welland.....	1,829	4,841
Cobourg.....	695	2,627	Weston.....	1,343	2,334
Cochrane.....	273	325	Whitby.....	4,384	7,436
Collingwood.....	451	1,087	Windsor.....	9,635	12,309
Cornwall.....	5,479	7,296	Woodstock.....	2,485	2,973
Dundas.....	1,259	1,106	York Twp.....	12,346	18,604
Eastview.....	2,525	3,055	York East Twp.....	8,059	8,677
Etobicoke Twp.....	56,729	70,092			
Forest Hill.....	1,702	2,914	Manitoba—		
Fort Erie.....	925	919	Brandon.....	3,379	3,658
Fort Frances.....	1,173	563	Brooklands.....	348	385
Fort William.....	5,569	10,138	Dauphin.....	565	609
Galt.....	2,832	4,142	North Kildonan.....	555	2,182
Gananoque.....	210	693	Portage la Prairie.....	449	3,891
Gloucester Twp.....	6,798	3,481	St. Boniface.....	3,134	6,709
Goderich.....	201	1,459	Selkirk.....	794	1,324
Guelph.....	4,071	15,040	The Pas.....	506	1,919
Haileybury.....	1,017	204	Transcona.....	2,963	7,793
Hamilton.....	39,385	43,444	Winnipeg.....	34,005	28,538
Hanover.....	228	300			
Hawkesbury.....	980	694	Saskatchewan—		
Huntsville.....	90	172	Biggar.....	49	303
Ingersoll.....	555	708	Estevan.....	3,155	1,757

14.—Estimated Value of Proposed Construction as Indicated by Building Permits Issued in 204 Municipalities, 1957 and 1958—concluded

Province and Municipality	1957	1958	Province and Municipality	1957	1958
	\$'000	\$'000		\$'000	\$'000
Saskatchewan—concluded			British Columbia—concluded		
Melville.....	196	131	Fernie.....	104	18
Moose Jaw.....	2,698	5,832	Kamloops.....	1,324	2,386
North Battleford.....	1,820	2,598	Kelowna.....	1,602	1,836
Prince Albert.....	2,954	4,387	Nanaimo.....	2,739	2,300
Regina.....	20,650	29,227	Nelson.....	2,534	423
Saskatoon.....	21,753	29,420	New Westminster.....	4,300	3,886
Swift Current.....	2,886	1,867	North Vancouver.....	2,944	4,793
Weyburn.....	2,748	1,209	Prince George.....	374	5,735
Yorkton.....	844	955	Prince Rupert.....	2,138	1,891
Alberta—			Revelstoke.....	157	129
Calgary.....	56,014	101,551	Rossland.....	95	99
Drumheller.....	184	213	Trail.....	483	1,060
Edmonton.....	64,379	72,445	Vancouver.....	56,255	55,897
Lethbridge.....	4,655	7,780	Vernon.....	1,620	1,567
Medicine Hat.....	3,188	5,604	Victoria.....	5,414	6,825
British Columbia—					
Chilliwack.....	989	1,740			
Cranbrook.....	641	648	Totals, 204 Municipalities.	1,307,151	1,621,636

Table 15 shows the value of building permits issued in 14 metropolitan areas across Canada. In 1958 the permits issued in these areas made up over 95 p.c. of the total for the 204 municipalities.

15.—Estimated Value of Building Permits Issued in Metropolitan Areas, 1957 and 1958

Metropolitan Area	1957	1958	Metropolitan Area	1957	1958
	\$'000	\$'000		\$'000	\$'000
Halifax.....	9,288	15,678	Windsor.....	21,137	24,893
Saint John.....	7,535	2,129	London.....	21,620	40,099
Quebec.....	35,070	42,304	Winnipeg.....	63,738	77,901
Montreal.....	249,209	325,334	Calgary.....	60,144	110,968
Ottawa-Hull.....	97,241	111,666	Edmonton.....	75,958	95,892
Toronto.....	344,230	427,177	Vancouver.....	148,652	170,672
Hamilton.....	66,150	77,167	Victoria.....	17,478	23,503

Tables 16 and 17 show the volume and value of building permits by province. These figures are useful when appraising the construction activity within and among municipalities. Comparisons of construction costs would not be warranted, however, without assurance that structures of similar size and quality were being compared. Despite limited application, this information constitutes one of the few indices of current economic activity in smaller localities.

The relative material was compiled from municipal figures and therefore varies with the terms of individual by-laws, with the methods of estimating the value of local construction and with other factors which may differ from area to area. Information is not available on the permits allowed to lapse without the relative construction being undertaken.

16.—Number of Dwelling Units Covered by Building Permits, by Province, 1954-58

Province and Year	Apartments	Other	Total	Province and Year	Apartments	Other	Total
Newfoundland.....1954	59	486	545	Prince Edward Island...1954	9	54	63
1955	12	556	568	1955	14	57	71
1956	71	479	550	1956	9	42	51
1957	5	320	325	1957	9	34	43
1958	55	568	623	1958	29	45	74

16.—Number of Dwelling Units Covered by Building Permits, by Province, 1954-58
—concluded

Province and Year	Apart- ments	Other	Total	Province and Year	Apart- ments	Other	Total
Nova Scotia.....1954	195	834	1,029	Manitoba—concluded...1956	415	3,584	3,999
1955	393	777	1,170	1957	381	2,685	3,066
1956	337	791	1,128	1958	1,578	4,234	5,812
1957	342	588	930	Saskatchewan.....1954	248	2,912	3,160
1958	484	662	1,146	1955	462	3,143	3,605
New Brunswick.....1954	120	508	628	1956	327	2,691	3,018
1955	164	635	799	1957	452	3,085	3,537
1956	137	824	961	1958	565	3,997	4,562
1957	33	559	592	Alberta.....1954	1,353	6,813	8,166
1958	103	690	793	1955	738	8,921	9,659
Quebec.....1954	7,053	18,070	25,123	1956	641	8,728	9,367
1955	11,083	19,049	30,132	1957	1,061	8,646	9,707
1956	8,028	18,370	26,398	1958	1,912	13,159	15,071
1957	13,967	12,191	26,148	British Columbia.....1954	1,855	11,173	13,028
1958	19,516	18,197	37,713	1955	3,134	12,753	15,887
Ontario.....1954	12,592	36,221	48,813	1956	2,897	11,410	14,307
1955	8,355	43,491	51,846	1957	2,318	10,889	13,207
1956	10,711	33,157	43,868	1958	4,021	14,324	18,345
1957	11,958	32,262	44,220	Canada ¹.....1954	21,229	81,401	105,630
1958	18,584	46,421	65,005	1955	25,376	93,685	119,061
Manitoba.....1954	883	4,187	5,070	1956	23,573	80,058	103,631
1955	1,150	4,516	5,666	1957	30,516	71,259	101,775
				1958	46,847	102,297	149,144

¹ Provincial totals do not add to the Canada totals because certain minor adjustments could not be distributed provincially.

17.—Value of Building Permits Issued, by Province, 1954-58

Province and Year	Residential Construction			Non-residential Construction				Total
	New	Repair	Total	Industrial	Com- mercial	Institu- tional and Govern- ment	Other	
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....1954	4,141	648	4,789	1,256	1,389	449	4	7,887
1955	4,565	743	5,308	483	1,965	1,077	19	8,852
1956	4,490	742	5,232	446	1,307	1,961	28	8,974
1957	2,727	762	3,489	410	1,662	3,540	19	9,120
1958	6,742	566	7,308	1,006	1,262	8,986	3	18,565
Prince Edward Is....1954	409	39	448	73	672	508	—	1,701
1955	520	61	581	240	775	2,584	—	4,180
1956	398	51	449	25	149	725	—	1,348
1957	336	30	366	24	393	72	—	855
1958	624	24	648	24	941	2,301	—	3,914
Nova Scotia.....1954	6,760	1,424	8,184	1,617	5,180	3,330	46	18,357
1955	8,142	1,494	9,636	1,398	3,358	5,325	40	19,757
1956	8,166	1,730	9,896	2,574	6,490	3,911	37	22,908
1957	6,374	1,080	7,454	1,765	4,514	3,972	19	17,724
1958	8,935	1,275	10,210	742	7,221	7,531	17	25,721
New Brunswick.....1954	4,237	1,056	5,293	1,339	2,148	6,715	16	15,511
1955	5,523	1,364	6,887	1,815	3,949	8,683	43	21,277
1956	7,958	1,661	9,619	1,775	4,408	6,190	1	21,993
1957	5,713	1,321	7,034	2,390	4,060	8,940	133	22,557
1958	7,244	1,098	8,342	1,269	3,681	5,999	34	18,725
Quebec.....1954	163,891	13,665	177,556	32,463	28,998	62,011	702	301,730
1955	191,517	15,128	206,643	38,131	50,118	88,126	864	383,882
1956	187,636	16,089	203,705	53,043	69,922	70,548	1,122	398,340
1957	185,410	12,300	197,710	62,104	52,802	77,052	1,006	390,674
1958	268,535	12,315	280,850	32,237	86,483	91,131	479	491,180

17.—Value of Building Permits Issued, by Province, 1954-58—concluded

Province and Year	Residential Construction			Non-residential Construction				Total
	New	Repair	Total	Industrial	Com- mercial	Institu- tional and Govern- ment	Other	
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Ontario.....1954	419,499	22,933	442,432	93,388	86,902	100,767	6,449	729,938
1955	474,454	24,849	499,303	79,078	117,139	96,425	8,648	800,593
1956	425,498	29,375	454,873	100,998	120,350	127,691	6,113	810,025
1957	419,572	24,991	444,563	95,880	158,772	126,455	2,946	828,616
1958	626,636	22,399	649,035	90,143	153,216	203,332	1,990	1,097,716
Manitoba.....1954	39,922	2,076	41,998	8,958	7,545	17,109	133	75,743
1955	46,835	2,758	49,593	12,905	10,796	26,736	76	100,106
1956	38,130	2,707	40,837	5,151	15,238	14,039	205	75,470
1957	27,517	2,577	30,094	9,463	23,249	11,523	96	74,425
1958	52,271	2,349	54,620	9,111	19,054	11,748	20	94,553
Saskatchewan.....1954	24,930	2,255	27,185	8,201	6,514	13,654	118	55,672
1955	29,615	2,257	31,872	4,252	7,668	13,911	101	57,804
1956	26,923	2,360	29,283	4,216	9,894	10,073	173	53,629
1957	33,239	2,482	35,721	5,132	11,716	13,086	113	65,768
1958	45,451	2,713	48,164	4,216	15,154	16,124	104	83,762
Alberta.....1954	68,126	5,062	73,188	12,378	29,091	32,418	605	147,680
1955	83,403	5,488	88,891	26,415	29,561	31,080	621	176,568
1956	84,388	6,562	90,950	17,559	44,920	34,060	615	188,104
1957	89,526	4,868	94,394	9,865	33,890	34,167	535	172,851
1958	140,199	3,992	144,191	30,516	46,968	36,301	433	258,409
British Columbia....1954	93,221	7,973	101,194	15,645	18,048	27,742	2,291	164,920
1955	122,425	8,684	131,109	30,768	28,280	36,021	3,213	229,391
1956	115,493	10,185	125,678	35,817	53,559	27,162	1,880	247,096
1957	121,209	10,363	131,572	31,536	50,554	30,192	847	244,701
1958	167,155	10,347	177,502	10,826	32,761	42,773	352	264,214
Canada ¹.....1954	826,227	57,295	883,522	175,675	186,540	265,083	10,365	1,521,185
1955	963,025	62,937	1,026,962	195,735	253,544	310,746	13,619	1,804,606
1956	902,064	71,438	973,522	221,601	326,227	296,359	10,171	1,827,880
1957	891,623	60,774	952,397	218,569	341,612	308,999	5,714	1,827,291
1958	1,323,792	57,078	1,380,870	180,090	366,741	425,626	3,432	2,356,759

¹ Provincial totals do not add to the Canada totals because of rounding of the figures and because certain minor adjustments could not be distributed provincially.

The indexes given in Table 18 show as far as possible the fluctuations in building costs and their effect upon construction work and employment. The relative proportions of material and wage costs in general building are difficult to determine since such proportions vary with the type of building and the centres studied.

18.—Value of Building Permits Issued in 204 Municipalities and Index Numbers of the Building Construction Industries, 1949-58

Year	Value of Building Permits, 204 Municipalities	Average Index Numbers (1949=100)			
		Prices of Building Materials		Wage Rates in Construction Industries ¹	Employment in Building Construction ²
		Residential	Non- residential		
	\$'000				
1949.....	616,161	100.0	100.0	100.0	100.0
1950.....	801,765	106.4	105.0	104.8	105.3
1951.....	681,162	125.5	118.6	119.2	116.6
1952.....	802,738	124.9	123.2	129.5	127.9
1953.....	1,088,880	123.9	124.4	137.2	127.8
1954.....	1,151,087	121.7	121.8	141.1	115.0
1955.....	1,310,124	124.3	123.4	146.6	117.8
1956.....	1,318,927	128.5	128.0	152.4	140.2
1957.....	1,307,151	128.4	130.0	162.9	144.4
1958.....	1,621,636	127.3	129.8	173.6	177.6
1959.....	1,632,426	129.9	131.7	183.4	129.0

¹ Compiled by the Department of Labour.

² As reported by employers with 15 or more employees.

Section 3.—Housing*

Subsection 1.—Government Aid to House-Building

Federal Assistance.—The role of the Federal Government in housing has expanded progressively since the introduction of the first continuing statute in 1935. Although the Government originally entered the housing field in 1919, when it made money available to the provinces for re-lending to municipalities for housing purposes, the first general piece of federal housing legislation was the Dominion Housing Act passed in 1935. This was followed by the National Housing Acts of 1938 and 1944, culminating in 1954 with the present National Housing Act, defined as “an Act to promote the construction of new houses, the repair and modernization of existing houses and the improvement of housing and living conditions”. Central Mortgage and Housing Corporation, a Crown agency incorporated by Act of Parliament in 1945, administers the National Housing Act and co-ordinates the activities of the Federal Government in housing. The Corporation assumes authority and responsibility for a variety of functions affecting housing in its long-term outlook as well as in its immediate requirements. It is empowered to act as an insurer of mortgage loans, as a lender or investor of public funds, as a guarantor and as an owner of property and other assets. It can also act as a research agency in fields associated with housing and can enter into partnership with both provincial and municipal governments to assist in housing.

In general, the Government, through the successive Housing Acts, has attempted to stimulate and supplement the market for housing rather than assume direct responsibilities which rightfully belong to other levels of government or which could more effectively be borne by private enterprise. In each case the aim has been to increase the flow of mortgage money and to encourage lenders to make loans on more favourable terms to prospective owners.

The volume of house-building in Canada since 1935 has been spectacular. Close to half of the country's present stock of more than 4,000,000 houses have been built since the first covering legislation was enacted; about one-third of these were financed in one way or another under the Housing Acts.

Under the terms of the National Housing Act, 1954 and its subsequent amendments, the Federal Government is active in many ways.

Loan Insurance.—Mortgage loans made by approved lenders may be insured for home ownership and for rental housing. They are normally available from approved lenders to individual home-owner applicants, to builders constructing houses for sale or for rent, to rental investors or to some special groups such as co-operative housing associations, farmers and defence workers. Upon application the borrower pays the Corporation a fee of \$35 per unit to help defray expenses incurred in the examination of plans and specifications, in the determination of lending values and in compliance inspections during construction. An approved lender may require that a home owner or home purchaser provide 10 p.c. of the value of the house from his own resources. For the home owner this equity may be in the form of cash, or a combination of cash, land and labour; for the home purchaser it is in cash. The regulations require that gross debt service—the ratio of repayments of principal, interest and taxes to the income of the borrower—should not exceed 27 p.c. Instances involving higher ratios may be considered on their merits by the approved lender and the Corporation.

The borrower pays an insurance fee which is added to the amount of the loan and is repaid over the term of the mortgage. In the case of a loan for a home-owner unit the borrower pays a fee of 2 p.c. of the loan if mortgage advances are required during construction and $1\frac{3}{4}$ p.c. if the total loan is advanced when construction is complete. On a rental loan the borrower pays $2\frac{1}{2}$ p.c. of the loan if advances are required during the construction and $2\frac{1}{4}$ p.c. if the loan is not required until construction is complete. In some areas, lenders have arranged to make the inspections for progress advances.

* Prepared in the Information Division, Central Mortgage and Housing Corporation, Ottawa.

For single-family home ownership, loans may be up to 90 p.c. of the first \$12,000 of lending value and 70 p.c. of the balance but may not exceed a total of \$12,800, plus the insurance fee. For multiple-rental dwellings the loan may not exceed 80 p.c. of the lending value with a maximum of \$8,250 per family unit. For loans for types other than single home-owner units, the maximum loan varies with the type of unit. The period of repayment for home-owner loans must be at least 25 years (unless a lesser period is requested in writing by the borrower) and not more than 30 years. Rental loans are repaid over 25 years and home conversion loans over 15 years, unless lesser periods are requested by the borrowers. Repayments are made in equal monthly instalments including principal, interest and municipal taxes. The maximum interest rate is prescribed by the Governor in Council; on Dec. 17, 1959 it was increased from 6 p.c. per annum to 6½ p.c.

Loans.—Sect. 40 of the National Housing Act authorizes the Corporation to make any type of loan that may be made by an approved lender under Part I of the Act (home-owner, defence worker, co-operative, builder or rental) or under Sect. 15 (rental guarantee projects where in the opinion of the Corporation a loan is not available to a satisfactory applicant through an approved lender). By Government policy, direct loans for rental guarantee projects have not been made in recent years. Loans corresponding to Part I loans have in the past been restricted in general to home ownership in the smaller urban centres. On May 22, 1958, however, direct lending was extended to include builders in any area and home owners in the larger centres, with the loans subject to size limitations which place the house in the small home category. Loans were made through agents of the Corporation between Sept. 3, 1957 and the suspension of the arrangements, which occurred for rental loans on Feb. 8, 1959 and for home-owner and builder's loans on Apr. 10, 1958. Funds that were available to CMHC under the statutory vote for direct lending purposes were fully committed in the first 10 months of 1959 and it was necessary to stop accepting new applications on Oct. 30.

Under Sect. 16 of the National Housing Act, the Corporation, with Government approval by Order in Council, may make a loan to a limited-dividend housing company to assist in financing the construction of a low-rental housing project or in the purchase of existing buildings and their conversion into a low-rental housing project. The dividends of the company are limited by the terms of its charter to 5 p.c. or less of paid-up share capital. A loan under Sect. 16 may not exceed 90 p.c. of the lending value which is established by the Corporation. The period for repayment may not exceed the useful life of the project and in any case may not be for more than 50 years. The interest rate is established by Order in Council. The 10-p.c. equity must be provided by the borrower in cash in advance. The company must present evidence that conditions of shortage, overcrowding or substandard housing exist in the district. Plans and specifications must be approved by the Corporation. The borrower pays to the Corporation an application fee of \$35 for each housing unit in the project. This may be reduced to \$17.50 a unit if evidence is submitted that dividends payable will not be taxable under the Income Tax Act when received by the shareholders.

Limited-dividend projects are subject to proven end costs. The total loan plus the equity must not exceed the actual cost of the project. If final costs are less than originally established, the loan is reduced proportionately. The loan is also reduced by the net revenue earned prior to the completion of construction. The borrower enters into an operating agreement with the Corporation fixing the rentals, income ranges of eligible tenants, the establishment and use of reserves and the submission of annual financial statements. Those considered eligible for accommodation are persons with incomes in the lower third of the income level of the municipality. An in-coming tenant's family income must not exceed four times the shelter rent of the dwelling unit. A tenant's lease is automatically terminated when his family income rises above five times the shelter rent.

Projects may be designed especially for the elderly. These projects have usually been sponsored by non-profit organizations requiring no return on equity. The Corporation requires that the limited-dividend company contribute at least half of the required

10-p.c. equity. The remainder may be provided by provincial or other grants; in some provinces, provincial grants are available to non-profit organizations. The income for entry must be at least twice the shelter rent and leases terminate automatically when income exceeds five times the shelter rent that would apply with a 90-p.c. loan.

Guarantees.—Since 1955, loans to assist in financing the improvement of existing houses have been available under Sect. 24 of the National Housing Act. This Section authorizes CMHC to give a limited guarantee to banks or approved instalment credit agencies in return for an insurance fee paid by the borrower on loans made for additions, repairs and alterations to his own home. A home improvement loan and the balance owing on any existing NHA home improvement loan on the property may not exceed \$4,000 for a one-family dwelling or \$4,000 for the first unit of a duplex, semi-detached, or multiple-family dwelling, plus \$1,500 for each additional unit up to a maximum of \$8,500 for a four-unit dwelling. Loans are repayable in monthly instalments together with interest, in not more than 10 years.

Investments.—Under Sect. 36 of the National Housing Act and complementary provincial legislation, the Federal Government and the government of a province may enter into a partnership agreement to build rental housing for families of low income. The Federal Government bears 75 p.c. of the capital costs and the provincial government the remainder, although the latter may call upon the municipality concerned to bear a portion of the provincial share. Federal-provincial rental housing projects are of two types—subsidized and full-recovery. In subsidized projects, rents are related to the tenant's family income and size of family; in full-recovery projects, rents are set at a level sufficient to amortize capital costs and to recover operating expenses.

Under the same Section of the National Housing Act, the Federal Government and the government of a province may also enter into an agreement to provide for a land assembly project, which involves the development of raw land for housing purposes. After subdivision planning, installation of sewer and water lines and the construction of roads and sidewalks, serviced lots are made available for sale to prospective home owners or to builders for residential construction. The Federal Government pays 75 p.c. of the costs of such projects and the province concerned pays the remainder.

Corporation Building.—The Corporation may construct and administer housing and certain other buildings on its own account and for other government departments and agencies. Its responsibilities include the provision of architectural and engineering designs, the calling of public tenders and the administration of the construction contracts—including any necessary on-site surveys and engineering. On such contracts the Corporation carries out full architectural and engineering inspections.

Grants.—The Federal Government makes financial assistance available to municipalities for the study of existing conditions and the establishment of their needs for redevelopment and housing. Financial aid is also available when a municipality acquires land for slum clearance. The Federal Government contributes 50 p.c. of the cost of acquiring and clearing the land and the remainder is contributed by the municipality.

Research.—The Government's housing agency is concerned also with building technology in the formulation of standards for house construction, in the use of suitable materials and in the development of new building techniques. The Corporation has no laboratory facilities but has direct experience of performance in the field and seeks the advice of specialists in the various agencies and departments of the Federal Government in such matters. Research into the factors affecting housing are concerned with the measurement of the demand for new housing, the volume of new housing built and the supply of mortgage money for house construction. The Corporation also co-ordinates and publishes statistical information on housing. Supported by funds provided under the National Housing Act, the Canadian Design Council directs a program towards the improvement of housing design in Canada.

Other Federal Legislation.—The Farm Credit Act, 1959 provides for federal long-term loan assistance for housing as well as for other farm purposes (see p. 442); the Veteran's Land Act, 1942 provides a form of loan and grant assistance to veterans for housing and other purposes (see p. 338); and the Farm Improvement Loans Act, 1944 provides for guarantees for intermediate- and short-term loans made by approved lending agencies to farmers for housing and other purposes. These three statutes are concerned only incidentally with housing. The primary provisions for housing as such are those in the NHA.

Provincial Assistance.—All provinces except Prince Edward Island have complementary legislation providing for joint federal-provincial housing and land assembly projects. In addition, separate legislation with respect to housing has been enacted by several provinces.

An Act to Improve Housing Conditions, 1948, passed by the Quebec Government, provides for a subsidy on mortgage loan interest charges in excess of 3 p.c. on new dwellings. In Ontario, the Planning Amendment Act, 1952 empowers municipalities with approved official plans to designate redevelopment areas and acquire and clear land therein for designated purposes. The Rural Housing Assistance Act, 1952 authorizes the establishment of a Crown company—the Rural Housing Finance Corporation—to lend and invest mortgage money for new rural housing. The Junior Farmer Establishment Act, 1952 provides for loans to young qualified farmers for housing and other purposes. The Elderly Persons Housing Aid Act, 1952 authorizes capital grants to limited-dividend corporations in respect of housing projects for elderly persons.

Manitoba, under the Elderly Persons Housing Act and amendments, authorizes capital grants to assist limited-dividend housing companies by the payment of 20 p.c. of construction costs up to a maximum of \$1,000 for a two-person unit and \$700 for a bachelor unit. The grant may be used to purchase furnishings and fixtures for the housing units. Saskatchewan assists limited-dividend projects for the elderly under the Housing Act and amendments, with capital grants up to 20 p.c. of the total capital cost. British Columbia assists limited-dividend projects for the elderly under the Elderly Citizen's Housing Aid Act. Capital grants not exceeding one-third of the total cost of the project may be made.

Subsection 2.—Housing Activities in 1959

House-building activity in 1959 was somewhat below the level of the previous year but was the second highest on record. Starts numbered 141,345 compared with the peak of 164,632 units in 1958 but the number of dwellings completed during 1959 at 145,671 was approximately the same as the 1958 total of 146,686. Production during the year was more than enough to meet the basic need for new housing.

During the five-year period 1955-59, new housing completions averaged 134,000 units a year. The proportion of new dwellings has been increasing steadily since the end of the War; from 1946 to 1959 some 1,500,000 new dwellings have been added to the country's housing stock which now comprises more than 4,000,000 units. This addition, however does not mean that there has been enough new housing to meet all needs, since there are still many poorly housed people in Canada, but the rate of new house-building has been more than sufficient to meet the requirements arising out of growth and movement of the population—factors that absorb an estimated 125,000 housing units annually.

Much of the falling-off in starts of both single-family and multiple-family dwellings in 1959 was in those financed by private lending institutions under the National Housing Act. Some decline also occurred in starts of dwellings financed by mortgage loans from

individuals and other non-institutional lenders, or financed without recourse to mortgage loans. There was little change in the number of dwelling starts financed by direct mortgage loans from the Central Mortgage and Housing Corporation and, for the second consecutive year, such starts made up more than 20 p.c. of the total for the year. Starts of dwellings financed by conventional loans from lending institutions increased in number.

The decline in starts of dwellings financed by institutional loans under the NHA was mainly attributable to a shortage of funds for such loans. Heavier demands for funds for other purposes and rising interest rates made the NHA mortgage, with its maximum interest rate of 6 p.c., less attractive to investors as the year progressed. Thus, towards the close of the year, before the maximum NHA interest rate was raised to 6½ p.c., the approved lenders had virtually stopped making loans under the Act. Nevertheless, housing demand remained strong throughout the year. As already stated, there were almost as many dwelling starts financed under the direct lending provisions of the Act in 1959 as in 1958 and, since a good proportion of them were started in the latter part of the year, construction was active during the winter months and about 82,000 units were carried over into 1960.

19.—Housing Units Started and Completed, 1952-59, and by Province, 1958 and 1959

Year and Province	Started			Completed		
	Under the Housing Acts	Other	Total	Under the Housing Acts	Other	Total
	No.	No.	No.	No.	No.	No.
1952.....	34,400	48,846	83,246	20,633	52,454	73,087
1953.....	39,989	62,420	102,409	35,506	61,333	96,839
1954.....	50,373	63,154	113,527	39,137	62,828	101,965
1955.....	65,377	72,899	138,276	58,852	69,077	127,929
1956.....	43,395	83,916	127,311	61,957	73,743	135,700
1957.....	47,468	74,872	122,340	33,301	83,982	117,283
1958.....	81,950	82,682	164,632	69,039	77,647	146,686
1959.....	62,333	79,012	141,345	74,675	70,996	145,671
1958						
Newfoundland.....	544	765	1,309	259	946	1,205
Prince Edward Island.....	41	186	227	17	92	109
Nova Scotia.....	959	1,787	2,746	646	1,674	2,320
New Brunswick.....	968	1,750	2,718	743	2,494	3,237
Quebec.....	14,424	31,900	46,324	10,994	28,756	39,750
Ontario.....	41,103	22,650	63,753	37,907	21,644	59,551
Manitoba.....	3,793	2,709	6,502	2,472	3,271	5,743
Saskatchewan.....	2,453	2,769	5,222	2,289	2,690	4,979
Alberta.....	10,008	6,524	16,532	7,619	5,943	13,562
British Columbia.....	7,657	11,642	19,299	6,093	10,137	16,230
1959						
Newfoundland.....	253	1,300	1,553	383	832	1,215
Prince Edward Island.....	40	394	434	44	308	352
Nova Scotia.....	1,086	3,228	4,312	1,035	2,914	3,949
New Brunswick.....	936	892	1,828	881	1,464	2,345
Quebec.....	10,779	25,486	36,265	12,847	26,073	38,920
Ontario.....	28,856	25,302	54,158	36,686	17,595	54,281
Manitoba.....	3,067	3,518	6,583	3,323	2,500	5,823
Saskatchewan.....	2,763	3,684	6,447	2,593	3,770	6,363
Alberta.....	9,138	9,936	19,074	10,230	3,953	14,183
British Columbia.....	5,415	11,276	16,691	6,663	11,587	18,240

20.—Housing Units Started in Metropolitan and Major Urban Areas, 1959

Area	Population 1959 ¹	Starts			Starts per 1,000 Population
		Under the Housing Act	Other	Total	
	No.	No.	No.	No.	No.
Metropolitan Areas—					
Calgary.....	271,483	4,561	737	5,298	19.5
Edmonton.....	324,956	2,936	1,068	4,004	12.3
Halifax.....	172,806	243	1,266	1,509	8.7
Hamilton.....	359,612	2,133	1,651	3,784	10.5
London.....	167,523	1,233	1,223	2,456	14.6
Montreal.....	1,871,770	3,677	17,262	20,939	11.2
Ottawa-Hull.....	394,009	2,954	2,437	5,391	13.7
Quebec.....	364,232	1,124	1,156	2,280	6.3
Saint John.....	91,244	217	112	329	3.6
St. John's.....	85,091	149	122	271	3.2
Toronto.....	1,461,112	9,987	8,787	18,774	12.9
Vancouver.....	749,957	3,714	5,796	9,510	12.7
Victoria.....	138,050	537	712	1,249	9.1
Windsor.....	193,766	516	207	723	3.7
Winnipeg.....	443,972	2,632	2,700	5,332	12.0
Totals, Metropolitan Areas	7,089,583	36,613	45,236	81,849	11.5
Major Urban Areas—²					
Brantford.....	53,797	180	154	334	4.0
Chicoutimi-Jonquière.....	61,354	555	231	786	7.1
Fort William-Port Arthur.....	86,760	366	488	854	9.0
Guelph.....	37,291	336	97	433	10.5
Kingston.....	50,661	344	159	503	6.3
Kitchener.....	69,952	785	457	1,242	13.7
Moncton.....	42,228	427	137	564	10.2
Niagara Falls.....	23,660	293	109	402	-
Oshawa.....	57,695	532	269	801	8.5
Peterborough.....	45,365	371	67	438	4.5
Regina.....	100,000	820	754	1,574	15.7
St. Catharines.....	41,211	280	280	904	5.0
Sarnia.....	47,146	505	279	784	13.2
Saskatoon.....	86,123	1,100	529	1,629	18.9
Sault Ste. Marie.....	41,484	616	301	917	9.1
Shawinigan Falls.....	30,862	58	188	246	3.9
Sherbrooke.....	63,276	226	321	547	8.2
Sudbury.....	77,044	394	276	670	1.4
Sydney.....	35,000	39	339	378	4.2
Timmins.....	28,325	61	77	168	4.3
Trois Rivières.....	58,000	306	219	525	4.9
Totals, Major Urban Areas	1,137,234	8,968	5,731	14,699	8.7
Other areas.....	9,451,183	7,958	27,396	35,354	5.2
Canada³	17,678,000	62,333	79,012	141,345	8.0

¹ Based on assessment reports. ² House-building activity in the fringe areas of major urban centres is included even where these areas are outside centres of 5,000 population or over. This activity is not included, however, in the total for all centres of 5,000 population or over. ³ Excludes the Yukon and Northwest Territories.

Operations under the National Housing Act.—In 1959, for the first time, public funds exceeded private funds in mortgage loan commitments under the National Housing Act. Direct mortgage loan commitments amounted to \$343,200,000 and the value of commitments by approved lenders amounted to \$282,300,000. Though there was little change from 1958 in the volume of direct lending, a substantial decline took place in insured mortgage lending under the Act.

As stated previously, competing demands for funds for other purposes and rising interest rates were responsible for the decrease in NHA activity of approved lenders during 1959, a decrease that was felt in all regions but particularly in Ontario and Quebec. In that year approved lenders made NHA loans amounting to \$282,300,000 for 25,000 dwellings compared with commitments of \$510,000,000 for 46,000 dwellings in 1958. All types of lenders

shared in the decline. The banks made loans for 14,000 dwelling units in 1959 compared with 25,700 in the previous year, and life, trust and loan companies made loans for 11,000 dwellings compared with 20,000. It is also noteworthy that the average amount of loan on an NHA insured dwelling was slightly higher in 1959 at \$11,283 than the 1958 average of \$11,156.

In 1959, direct mortgage loans were made by the Corporation for 32,228 dwelling units compared with 36,453 in 1958. Though the difference in the number of loans approved in the two years was not great, despite the absence in the later year of rental loans other than those to limited-dividend companies, there was considerable difference in the timing of these loans. In 1958 loans were available to owners and builders throughout most of the year; in 1959 loans to owner applicants were available throughout most of the year but loans to builders were not available until September. In the first eight months of 1959, Corporation loans were down from the previous year by 39 p.c. but in the last four months there was an increase of 32 p.c. Because of the short period of availability, there was a marked decline in loans to builders for the year, but this was largely offset by a considerable increase in loans to owner applicants, particularly those in the smaller centres of fewer than 55,000 population.

21.—Mortgage Loan Approvals¹ under the National Housing Act, by Month, 1956-59

Month	Number of Units			
	1956	1957	1958 ^a	1959
January.....	1,245	325	2,786	2,933
February.....	2,067	1,132	5,515	2,395
March.....	4,101	1,902	6,776	3,559
April.....	5,817	3,083	6,026	6,664
May.....	7,242	4,711	8,989	6,348
June.....	6,873	4,696	9,045	7,069
July.....	4,795	5,614	9,351	5,857
August.....	4,633	3,592	7,874	3,840
September.....	2,955	4,425	8,234	10,095
October.....	2,553	10,104	8,614	7,850
November.....	1,020	7,725	6,559	3,732
December.....	662	3,365	5,271	584

¹ Includes CMHC loans—direct and agency.

22.—Net Loans Approved under the National Housing Acts, by Province, 1952-59

NOTE.—Figures for 1945-51 will be found in the 1955 Year Book, p. 744.

Year and Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
1952—												
Loans.....No.	26	9	227	167	4,092	12,336	1,380	307	3,486	1,688	—	23,718
Dwellings.....	27	9	260	182	9,117	16,038	1,916	629	4,056	2,089	—	34,323
Amount.....\$'000	198	64	2,036	1,438	60,538	123,794	13,159	4,533	28,789	14,535	—	249,084
1953—												
Loans.....No.	158	15	410	308	4,684	13,097	1,558	633	3,738	1,913	—	26,514
Dwellings.....	168	16	1,130	333	7,456	18,805 ^a	2,050	832	5,484	2,360	—	38,614 ^a
Amount.....\$'000	1,279	124	7,813	2,629	55,459	145,129	14,672 ^a	6,231	39,593	17,593	4	290,526 ^a
1954—												
Loans.....No.	127	16	480	375	6,975	20,412 ^a	1,913	895 ^a	4,501 ^a	3,882	—	39,576 ^a
Dwellings.....	166	16	746	391	9,057	26,159 ^a	2,540	1,051 ^a	5,849 ^a	4,344	—	50,319 ^a
Amount.....\$'000	1,665	154	6,075	3,373 ^a	81,128	241,332 ^a	21,813	9,231 ^a	50,768 ^a	39,418	—	454,957 ^a
1955—												
Loans.....No.	343	31	656	496	8,089	29,538	3,006	1,674	6,499	5,813	4	56,149
Dwellings.....	344	33	778	667	10,876	33,498	3,403	1,982	7,057	6,698 ^a	—	65,340 ^a
Amount.....\$'000	3,560	311	6,869	5,390	97,899	326,670 ^a	29,722	17,010	64,766	63,091	37	615,325 ^a

22.—Net Loans Approved under the National Housing Acts, by Province, 1952-59—concluded

Year and Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
1956—												
Loans.....No.	200	12	547	398	5,390	17,466	2,026	1,252	4,899	3,602	2	35,794
Dwellings...."	178	12	650	412	7,105	20,292	2,136	1,528	5,080	3,888	2	41,283
Amount.....\$'000	2,002	124	6,087	3,916	68,205	202,763	19,814	13,544	50,737	39,914	26	407,132
1957—												
Loans.....No.	152	13	458	388	6,277	22,019	1,116	1,519	4,686	3,344	2	39,974
Dwellings...."	144	13	532	392	9,144	25,920	1,472	2,121	5,247	3,946	2	48,933
Amount.....\$'000	1,648	133	5,218	3,832	87,737	267,256	13,823	19,962	53,710	40,594	26	493,939
1958—												
Loans.....No.	311	38	785	908	9,732	32,214	2,852	2,335	9,655	6,671	14	65,515
Dwellings...."	314	40	972	972	14,267	41,210	3,819	2,509	10,498	7,554	14	82,169
Amount.....\$'000	3,691	392	10,139	9,376	142,586	451,201	38,111	27,301	116,763	83,186	178	882,924
1959—												
Loans.....No.	237	34	933	865	7,969	21,168	2,587	2,589	7,784	4,978	27	49,171
Dwellings...."	237	40	1,025	924	9,505	26,152	3,041	2,704	8,483	5,172	27	57,310
Amount.....\$'000	2,691	402	11,009	9,081	99,159	285,630	32,258	30,158	96,741	58,714	324	626,167

Loans to Limited-Dividend Companies.—Loans were made to limited-dividend companies in 1959 to finance the construction of 4,518 low-rental dwellings in areas where conditions of shortage, overcrowding or substandard housing existed; this figure compares with loans for 6,282 limited-dividend units approved in the previous year. The accommodation in 1959 was directed towards the lower-third income level and projects were designed so that their capital costs would be consistent with low rents. More than 900 of the dwellings approved were designed for elderly persons and were sponsored mainly by non-profit companies.

Borrower and House Characteristics.—The average new owner of a 1959 house financed under the NHA was slightly more than 34 years of age and had either one or two children. His income was \$5,716 a year, compared with \$5,657 for the average new owner in 1958, and the house he bought cost \$14,516 with an additional amount of \$228 for the mortgage insurance fee. The new owner made a down-payment of \$3,000 and committed himself to payments of \$96 a month for mortgage, principal, interest and taxes, which amount represented 20.1 p.c. of his income. These were the figures for the average new owner but there were substantial differences between different groups of owners. Borrowers who financed their houses with Small Home Loans had incomes nearly \$900 a year less than those who financed their houses under the insured loan program. Under the Small Home Loans program, the houses cost \$2,156 less than those financed by insured loans, and the down-payment was \$1,268 less.

More than 80 p.c. of the houses financed under the Act in 1959 were three-bedroom bungalows and split-level houses made up most of the remainder; two-storey and one-and-a-half-storey houses represented only 2 p.c. of the total. There was little change from the previous year in the average size of dwelling—1,108 sq. feet in 1959 compared with 1,118 sq. feet in 1958. Dwellings financed under the Small Home Loans program averaged 1,046 sq. feet, other Corporation-financed dwellings 1,089 sq. feet, and dwellings financed by the approved lenders averaged 1,165 sq. feet.

On the other hand, there was some increase in 1959 in the costs of dwellings financed under the Act. Land costs were up about 3 p.c., raising the cost of the average lot to \$2,533 compared with \$2,471 in 1958. Construction costs per sq. foot increased by 2 p.c. to \$10.79. With little change in size, these increases raised the average cost of dwellings to \$13,987 under the Small Home Loans program and to \$15,896 for dwellings financed by the approved lenders. An additional \$228 was required for the mortgage insurance fee.

Home Improvement Loans.—Lending under the Home Improvement provisions of the NHA was again substantial as the Federal Government continued to encourage owners to make improvements to their homes during the winter months. Nearly 33,000 loans, amounting to \$37,500,000, were made during 1959 as compared with 34,000 loans amounting to \$36,000,000 made during 1958.

Urban Improvement.—Grants were approved in 1959 to assist three municipalities—Halifax, Toronto and Windsor—in the redevelopment of blighted areas. The contributions of the Federal Government, which amount to one-half the cost of acquiring and clearing the area, totalled \$5,000,000. Grants were also made to ten municipalities to assist in carrying out urban renewal studies, which usually precede redevelopment programs.

Federal-Provincial Projects.—Nine public housing projects were approved under the federal-provincial partnership arrangement of the Act during 1959. These projects will provide 772 low-rental apartments in nine Canadian municipalities; the Federal Government will advance 75 p.c. of the capital cost of each project and the province concerned will bear the remainder. Under similar partnership arrangements, whereby land may be obtained for residential use, 1,775 lots were sold during 1959, raising to a total of 7,936 the number serviced and sold out of some 14,800 authorized for development.

Housing Research and Community Planning.—The Corporation, in the course of its work, engages in housing research. In addition, it has a specific responsibility under the Act to carry out or arrange for studies and investigations by other institutions or agencies which will lead to the improvement of housing and community planning. In 1959 expenditures for these activities amounted to \$1,100,000, of which more than one-third was spent outside the Corporation.

Arrangements were continued during 1959 with Canadian universities for the advancement of training in community planning. Federal grants provide for fellowships and bursaries for postgraduate and research work in housing, planning and urban development and for assistance to the four universities having faculties for these studies. A grant was approved to assist a country-wide inquiry undertaken by the Royal Architectural Institute of Canada into the design of residential areas. The Corporation also continued to give financial assistance to the Community Planning Association of Canada, a voluntary society incorporated to promote nation-wide recognition of the importance of orderly community and regional development.

CHAPTER XVI.—SURVEY OF PRODUCTION*

CONSPECTUS

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SECTION 1. DESCRIPTION OF THE COMMODITY PRODUCTION SERIES.....	739	SECTION 2. TRENDS IN COMMODITY PRODUCTION.....	740

NOTE.—The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Section 1.—Description of the Commodity Production Series

The scope of the Survey of Production is limited to industries engaged chiefly in the production of commodities, the term "production" applying to such processes as the growing of crops, the mining of metals and other minerals, the catching of fish, the conversion of falling water into electric energy, the construction of buildings and the manufacturing and processing of goods. The activities of the transportation, communications, trade, finance and service industries are excluded, except as certain of their costs are indirectly reflected in the value of output of commodity-producing industries. This is in contrast to the scope of the widely used Gross National Product series (see Chapter XXIII) which encompasses all industries.

The "net" value of production, or "value added", is generally considered the most significant measure of production, since in assessing the contribution of each industry to the total it is essential that inter-industry duplication be eliminated. Value added is computed by deducting from the total value of output (excluding indirect taxes) for each industry, the cost of materials, fuels, purchased electricity and process supplies consumed in the production process.

The measurement of value added is similar to although not strictly comparable with the concept involved in the contribution of each industry to the gross domestic product at factor cost (net income originating plus depreciation). The main difference is that value added, as computed for each commodity-producing industry, includes the cost of such services as insurance, advertising, communications, etc., which originate in the non-commodity-producing industries. In national income accounting, the contribution of these services to gross national product is classified with the non-commodity-producing group. For instance, the cost of insurance incurred by manufacturers is included in the net value of the manufacturing industry in the Survey of Production series but is not included in the contribution of manufacturing to the gross national product. Thus the measurement of the value of output based on value added contains a certain amount of duplication and the figures for the industrial groups are always higher than those given in the National Accounts series.

One of the major advantages of the commodity-production series is that the statistics may be classified by provinces. With the exception of personal income and its major components, the geographical distribution of gross national product is not available mainly because profits cannot be allocated according to the provinces in which they are generated by productive activity. A more detailed explanation of the series and the conceptual and classification differences as compared with the Gross National Income series is given in DBS Bulletin *Survey of Production 1926-1956* (Catalogue No. 61-202).

* Prepared in the National Income Section, Research and Development Division, Dominion Bureau of Statistics.

Section 2.—Trends in Commodity Production

The decade 1947 to 1957 was a period of tremendous growth in commodity production in Canada. The total net value of output all but doubled from 1947 to 1955 and increased another 13.0 p.c. by 1957. Among the primary industries, mining showed the greatest absolute increase, advancing from \$402,538,000 to \$1,308,518,016 or by 225.1 p.c. Electric power followed, rising 172 p.c. in the same comparison and reflecting the increase in installed generating capacity during the period. However, the great activity experienced by the construction industry all across the country during these years resulted in that industry showing the largest proportionate gain of all the major commodity-producing industries in the 1947-57 comparison; its net value of output rose by 285.6 p.c. from \$963,100,000 to \$3,713,372,000. Manufactures also advanced steadily throughout the period, reaching a total 129 p.c. above that of 1947.

The shift in relative importance of primary and secondary production during the 1947-57 period is noteworthy. In the earlier year primary production represented 34 p.c. of the total net value of Canadian production and secondary output 66 p.c.; by 1957 the proportions were 24 p.c. and 76 p.c., respectively. Internally, agriculture's share of total net value dropped from 20 p.c. to 9 p.c. over the ten-year period and the relative importance of construction increased from 12 p.c. to 21 p.c. The contribution of manufacturing to total net value of production remained fairly steady at from 53 to 55 p.c.

1.—Net Value of Production and Percentage Analysis, by Industry, 1947, 1950, 1953 and 1955-57

NOTE.—Net production represents total value under a particular heading, less the cost of materials, fuel, purchased electricity and supplies consumed in the production process. Data for fisheries and trapping represent total value.

Industry	1947		1950		1953	
	Net Value	P.C. of Total	Net Value	P.C. of Total	Net Value	P.C. of Total
	\$		\$		\$	
Primary Industries¹	2,714,630,000	34.1	3,388,077,063	31.2	4,084,087,315	27.9
Agriculture ¹	1,566,458,000	19.7	1,832,886,000	16.9	2,182,781,000	14.9
Forestry ²	439,029,000	5.5	487,119,735	4.5	558,335,173	3.8
Fisheries.....	57,517,000	0.7	82,191,043	0.8	89,832,500	0.6
Trapping.....	16,843,000	0.2	15,204,419	0.1	13,221,035	0.1
Mining.....	402,538,000	5.1	657,328,669	6.0	790,596,855	5.4
Electric power.....	232,245,000	2.9	313,347,197	2.9	449,320,752	3.1
Secondary Industries	5,255,156,000	65.9	7,486,758,229	68.8	10,547,069,351	72.1
Manufactures.....	4,292,056,000	53.8	5,942,058,229	54.6	7,993,069,351	54.6
Construction.....	963,100,000	12.1	1,544,700,000	14.2	2,554,000,000	17.5
Totals	7,969,786,000	100.0	10,874,835,292	100.0	14,631,156,666	100.0
Industry	1955		1956		1957	
	Net Value	P.C. of Total	Net Value	P.C. of Total	Net Value	P.C. of Total
	\$		\$		\$	
Primary Industries¹	4,245,604,889	26.9	4,752,434,308	26.8	4,289,442,028	24.1
Agriculture ¹	1,867,767,000	11.8	2,055,684,000	11.6	1,679,721,000	8.9
Forestry ²	664,288,507	4.2	760,837,996	4.3	663,242,357	3.7
Fisheries.....	91,390,400	0.6	105,956,600	0.6	94,247,100	0.5
Trapping.....	17,423,973	0.1	12,360,799	0.1	10,950,555	0.1
Mining.....	1,061,430,009	6.7	1,224,102,003	6.9	1,308,518,016	7.3
Electric power.....	543,305,000	3.5	593,493,000 ³	3.3	632,763,000	3.6
Secondary Industries	11,521,650,496	73.1	12,949,124,579	73.2	13,535,456,726	75.9
Manufactures.....	8,753,450,496	55.5	9,605,424,579	54.3	9,822,084,726	55.1
Construction.....	2,770,200,000	17.6	3,343,700,000	18.9	3,713,372,000	20.8
Totals	15,769,255,385	100.0	17,701,558,887	100.0	17,824,898,754	100.0

¹ Excludes agriculture in Newfoundland.

² Excludes farm woodlots.

³ Method of compilation changed in 1956. Net value of production for electric power on the old basis was \$613,773,000 in 1956.

Although all provinces and territories contributed to the increase in net value of production over the 1947-57 decade, there was considerable variation in their rates of advance. Ontario, with a record net value of output amounting to \$7,541,109,610 in 1957, recorded by far the largest absolute increase over 1947, followed in order by Quebec, British Columbia and Alberta. However, the percentage increase of 153.9 shown by Alberta was higher than that of Ontario at 138.4, and the percentage increase shown by British Columbia at 128.9 was higher than that of Quebec at 121.7. The relative contributions of the provinces to the total net value showed little change over the decade. Ontario's share increased from 40 p.c. to 42 p.c., Alberta and British Columbia showed marginal increases and the contributions of the other provinces remained almost unchanged.

It is also interesting to note the consistencies and shifts in the contributions of the different provinces to the net value for certain industries. Over the 1947-57 period, and indeed over the past two or three decades, the provincial contributions to the over-all value of manufacturing has remained quite stable. Approximately 80 p.c. of the net value of manufacturing normally has originated in Ontario and Quebec and, when British Columbia is added, about 90 p.c. of the net value of manufacturing is covered. In mining, the historical record shows that both Ontario and British Columbia have been losing their prominence to Alberta and Quebec. Saskatchewan has also recorded sharp relative growth in mining over the past two decades. Since 1953 Alberta has contributed more to the net value of mining than any other province, whereas before 1953 Ontario was in the lead. Actually the drop in the prominence of Ontario has been very sharp since 1935 when that province contributed 50 p.c. of mining net value compared with only 23 p.c. in 1957.

In forestry, British Columbia and Alberta have been making larger relative contributions to the total net value in recent years at the expense of Quebec and, to a lesser extent, of Ontario. Provincial contributions to agriculture, while very erratic from year to year, have not changed significantly over the past few decades. Perhaps the most striking fact about agriculture is the extent of the variations in net value originating by province. Saskatchewan is particularly affected by the success or failure of grain crops.

3.—Net Value of Production and Percentage Analysis, by Province, 1947, 1950, 1953 and 1955-57

Province or Territory	1947		1950		1953	
	Net Value	P.C. of Total	Net Value	P.C. of Total	Net Value	P.C. of Total
	\$		\$		\$	
Newfoundland ¹	—	—	104,211,000	1.0	159,195,289	1.1
Prince Edward Island.....	21,669,000	0.3	30,011,000	0.3	32,551,962	0.2
Nova Scotia.....	208,861,000	2.6	260,789,000	2.4	329,766,794	2.3
New Brunswick.....	194,758,000	2.4	242,713,000	2.2	260,996,477	1.8
Quebec.....	2,087,785,000	26.2	2,838,374,000	26.1	3,803,883,257	26.0
Ontario.....	3,163,232,000	39.7	4,469,631,000	41.1	5,990,989,151	40.9
Manitoba.....	392,535,000	5.0	490,604,000	4.5	563,662,409	3.9
Saskatchewan.....	511,674,000	6.4	636,163,000	5.8	911,956,307	6.2
Alberta.....	566,655,000	7.1	756,892,000	7.0	1,180,122,362	8.1
British Columbia ²	815,564,000	10.2	1,027,952,000	9.4	1,376,443,675	9.4
Yukon and Northwest Territories ²	7,054,000	0.1	17,495,000	0.2	21,588,983	0.1
Canada.....	7,969,787,000	100.0	10,874,835,000	100.0	14,631,156,666	100.0

For footnotes, see end of table, p. 742.

3.—Net Value of Production and Percentage Analysis, by Province, 1947, 1950, 1953 and 1955-57—concluded

Province or Territory	1955		1956		1957	
	Net Value	P.C. of Total	Net Value	P.C. of Total	Net Value	P.C. of Total
	\$		\$		\$	
Newfoundland ¹	190,913,405	1.2	212,599,766	1.2	193,131,311	1.1
Prince Edward Island.....	37,364,580	0.2	39,259,756	0.2	35,297,793	0.2
Nova Scotia.....	343,263,556	2.2	380,581,711	2.1	396,076,551	2.2
New Brunswick.....	289,916,350	1.8	319,005,440	1.8	296,607,784	1.6
Quebec.....	4,154,735,222	26.4	4,543,081,302	25.7	4,628,986,997	26.0
Ontario.....	6,426,947,022	40.8	7,069,995,790	39.9	7,541,109,610	42.3
Manitoba.....	585,219,522	3.7	687,187,638	4.0	637,187,825	3.6
Saskatchewan.....	837,778,719	5.3	1,030,085,152	5.8	760,334,636	4.2
Alberta.....	1,278,233,313	8.1	1,512,127,462	8.5	1,438,426,795	8.1
British Columbia ²	1,587,990,127	10.1	1,875,455,712	10.6	1,867,322,479	10.5
Yukon and Northwest Territories ² ..	36,893,569	0.2	32,179,158	0.2	30,416,973	0.2
Canada.....	15,769,255,385	100.0	17,701,558,887	100.0	17,824,898,754	100.0

¹ Excludes agriculture, with British Columbia.

² Construction figures for the Yukon and Northwest Territories are included

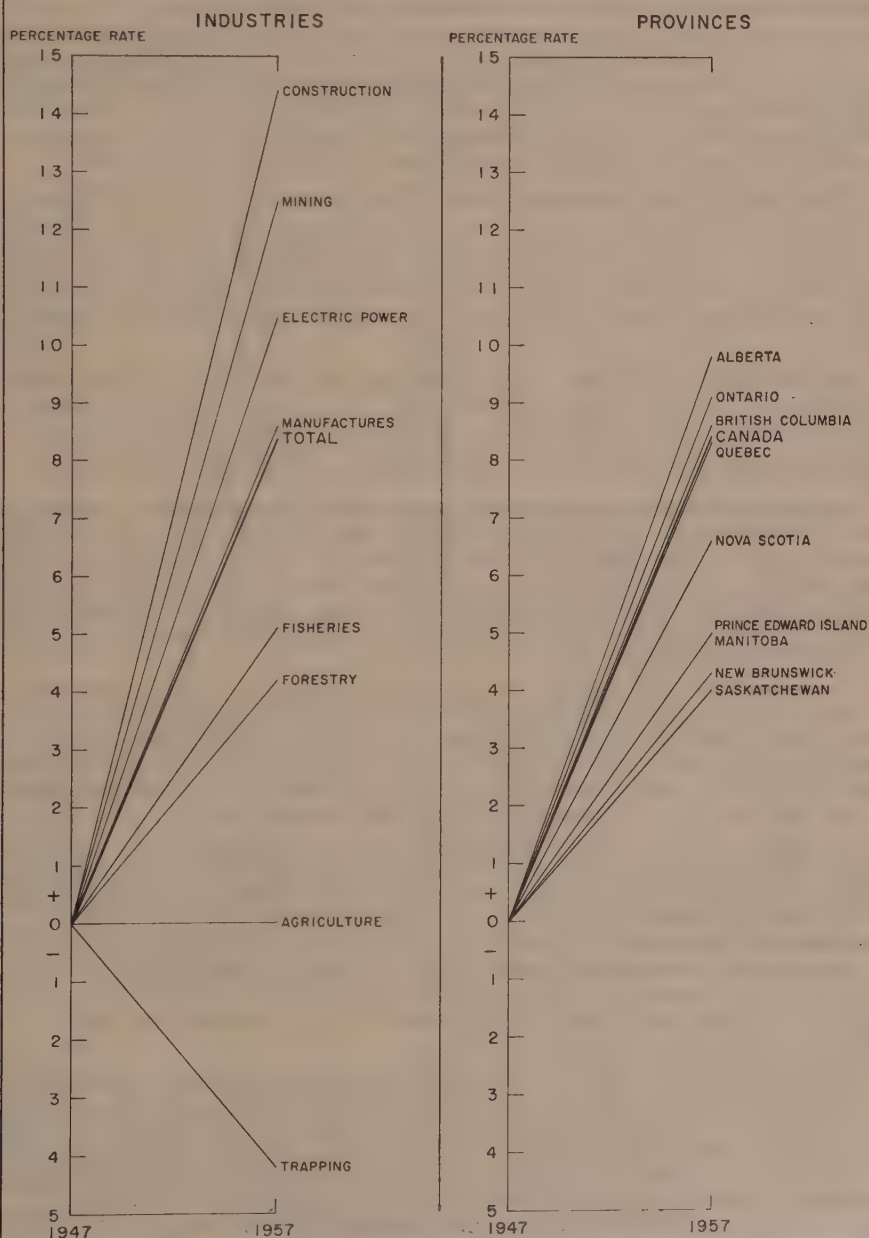
The chart on p. 743, calculated by using the formula for compound interest and the years 1947 and 1957 only, shows graphically the compounded average annual rates of growth for industries and for provinces for the decade 1947-57. According to this calculation, the average annual rate of growth in the total net value of commodity production was just over 8 p.c. Construction, indicative of heavy new investment expenditures, reflected the sharpest growth rate (+15 p.c.), while trapping (-4 p.c.) was the only industry to decline over the period. Agriculture showed no change. Mining, reflecting the substantial increases in petroleum, natural gas, uranium and iron ore production, had an average rate of growth of nearly 13 p.c. Electric power and manufactures also showed rates of growth that exceeded the total whereas fisheries and forestry were below the average. The compounded annual rates of growth of the provinces varied between 4 p.c. and 10 p.c. over the decade. Alberta, reflecting the effects of the sharp expansion in oil and gas production, had the highest rate of growth (10 p.c.), and Saskatchewan's rate was the lowest, indicating the province's dependence on the fortunes of agriculture. Over the decade, the annual rates for Ontario, Quebec and British Columbia ranged between 8 and 9 p.c. New Brunswick, Manitoba, Prince Edward Island and Nova Scotia recorded rates of growth between 4 p.c. and 7 p.c.

Developments in 1957 Compared with 1956.—The net value of Canadian commodity production reached the record total of \$17,825,000,000 in 1957, only slightly above the 1956 total of \$17,702,000,000. There were both gains and losses among the industries. Construction increased by 11 p.c., mining and electric power each by 7 p.c. and manufacturing by 2 p.c. Agriculture showed the sharpest of the losses, its net value of output being down more than 23 p.c. Forestry decreased by 13 p.c., and fisheries and trapping each by 11 p.c.

Commodity production in the different provinces in 1957 is analysed in the following paragraphs.

Newfoundland.—The net value of commodity production in Newfoundland, exclusive of agriculture, amounted to \$193,000,000 in 1957, constituting just over 1 p.c. of the Canadian total. This amount represented a decline of 9 p.c. from the 1956 value level, a decline apparent in all industries except electric power. Manufacturing, the principal commodity-producing industry in Newfoundland, accounts for approximately 30 p.c. of commodity net value. Other major industries, in order of relative importance, are construction, mining, forestry, and fishing; recently mining has been increasing its share of the provincial total largely as a result of the Labrador iron ore output.

COMPOUNDED ANNUAL RATE OF GROWTH⁽¹⁾ IN NET VALUE OF COMMODITY PRODUCTION 1947-57



(1) CALCULATED USING THE FORMULA FOR COMPOUND INTEREST AND THE YEARS 1947 AND 1957 ONLY.

Prince Edward Island.—The economy of this province is largely agricultural—farm production accounted for 39 p.c. of the total net value of commodity production in 1957, construction for 28 p.c. and manufacturing for 19 p.c. The total, which amounted to \$35,000,000 was down about 10 p.c. from the level of the previous year.

Nova Scotia.—The net value of commodity production in Nova Scotia in 1957 increased 4 p.c. over 1956 to reach \$396,000,000. Of this amount, manufacturing accounted for 44 p.c. and construction, second in importance, for 22 p.c. Mining continued to rank as Nova Scotia's main primary industry, contributing over 13 p.c. of the total net value of output, and agriculture and fisheries each accounted for 6 p.c. The net value of commodity output of the province constitutes about 2 p.c. of the Canadian total.

New Brunswick.—In 1957, the net value of commodity production in New Brunswick amounted to \$297,000,000, a drop of 7 p.c. from the preceding year. The province's share of the Canadian total was 1.6 p.c. Manufacturing is the principal activity and accounted for nearly 42 p.c. of the total net value in 1957; construction, the relative importance of which has been increasing in recent years, accounted for 26 p.c. Forestry, the principal primary industry, contributed 11 p.c. of the total in 1957 and agriculture 10 p.c.

Quebec.—Quebec's net value of production was 2 p.c. higher in 1957 than in 1956, increasing from \$4,543,000,000 to \$4,629,000,000. The province's share of the Canadian total was 26 p.c. Manufacturing leads all industries in Quebec, accounting in 1957 for nearly 64 p.c. of the province's net value of output. Construction contributed 18 p.c. while agriculture and mining, the main primary industries, each accounted for 5 p.c.

Ontario.—The net value of commodity production in Ontario advanced nearly 7 p.c. from \$7,070,000,000 in 1956 to \$7,541,000,000 in 1957, the latter being 42 p.c. of the Canadian total for that year. The economy of Ontario, like that of Quebec, is largely dominated by manufacturing which has contributed between 67 p.c. and 69 p.c. of the provincial net value of commodity output in recent years. The net value of construction accounted for more than 17 p.c. of the provincial total in 1957 and agriculture, the next in importance, accounted for 7 p.c.

Manitoba.—Manitoba's net value of commodity production declined from \$687,000,000 in 1956 to \$637,000,000 in 1957, a drop of over 7 p.c., mainly as a result of lower value of agricultural output. Manufacturing, which has been the province's principal activity since 1953, accounted for 43 p.c. of 1957 net value. Construction has increased in importance in recent years and accounted for 26 p.c. of the total in 1957. Agriculture's share of the province's net value of output was 20 p.c. in 1957 compared with 27 p.c. in 1956.

Saskatchewan.—The economy of Saskatchewan is largely dependent on agriculture and particularly on wheat production. Thus the reduced yield of 1957 brought a sharp decline in the value of the province's commodity output. The total was \$760,000,000, 26 p.c. below the 1956 level, with the result that Saskatchewan's contribution to the Canadian total declined to 4 p.c. from 6 p.c. in 1956. The agriculture industry accounted for 39 p.c. of the province's net value of output in 1957 compared with 59 p.c. in the previous year. Construction and manufacturing contributed 26 p.c. and 14 p.c., respectively, in 1957 and mining, with a contribution of 17 p.c., increased its share of the provincial output from 7 p.c. in 1956.

Alberta.—The net value of commodity production in Alberta amounted to \$1,438,000,000 in 1957, down 5 p.c. from the 1956 total of \$1,512,000,000. The province's contribution to the Canadian total was 8 p.c. in 1957. Agriculture in Alberta has declined in relative importance in recent years, and accounted for only 19 p.c. of the provincial total in 1957 as compared with nearly 26 p.c. in 1956. Construction, mining and manufacturing industries, on the other hand, have all increased; they contributed 29 p.c., 26 p.c. and 22 p.c., respectively, to the provincial total in 1957 compared with 26 p.c., 25 p.c. and 19 p.c., respectively, in the immediately preceding year.

British Columbia.—British Columbia's net value of production dropped slightly to \$1,867,000,000 in 1957. The province contributed 10.5 p.c. of the Canadian aggregate, ranking third among the provinces. Manufacturing is the leading industry and accounted for 41 p.c. of the province's total net value of commodity output. Construction, which has increased in relative importance in recent years, contributed 31 p.c., forestry nearly 14 p.c. and mining 5 p.c.

5.—Net Value of Production and Percentage Analysis, by Province, 1956 and 1957

Industry	Newfoundland		Prince Edward Island		Nova Scotia		New Brunswick	
	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.
1956								
Agriculture.....	—	—	17,329	44.1	25,693	6.8	35,361	11.1
Forestry.....	23,966	11.3	—	—	16,164	4.2	45,947	14.4
Fisheries.....	15,090	7.0	3,949	10.1	25,038	6.6	8,146	2.5
Trapping.....	158	0.1	2	—	158	—	148	—
Mining.....	51,332	24.1	—	—	50,119	13.2	12,028	3.8
Electric power.....	8,446	4.0	1,418	3.6	17,989	4.7	13,061	4.1
Manufactures.....	62,608	29.5	6,162	15.7	159,820	42.0	125,314	39.3
Construction.....	51,000	24.0	10,400	26.5	85,600	22.5	79,000	24.8
Totals, 1956.....	212,600¹	100.0	39,260	100.0	380,582	100.0	319,005	100.0
	Quebec		Ontario		Manitoba		Saskatchewan	
	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.
Agriculture.....	250,743	5.5	464,844	6.6	187,535	27.3	610,018	59.2
Forestry.....	224,899	5.0	125,917	1.8	9,514	1.4	5,404	0.5
Fisheries.....	4,440	0.1	7,927	0.1	2,947	0.4	784	0.1
Trapping.....	1,162	—	2,990	—	2,240	0.3	2,837	0.3
Mining.....	243,074	5.3	246,454	3.5	27,487	4.0	76,450	7.4
Electric power.....	171,415	3.8	236,993	3.3	27,548	4.0	21,564	2.1
Manufactures.....	2,888,149	63.6	4,868,570	68.9	270,018	39.3	113,628	11.0
Construction.....	759,200	16.7	1,116,300	15.8	159,900	23.3	199,400	19.4
Totals, 1956.....	4,543,081	100.0	7,069,996	100.0	687,188	100.0	1,030,085	100.0
	Alberta		British Columbia		Yukon and Northwest Territories		Canada	
	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.
Agriculture.....	389,926	25.8	74,235	4.0	—	—	2,055,684	11.6
Forestry.....	14,701	1.0	293,174	15.6	1,152	3.6	760,838	4.3
Fisheries.....	790	—	36,058	1.9	787	2.4	105,957	0.6
Trapping.....	1,132	—	573	—	961	3.0	12,361	0.1
Mining.....	380,800	25.2	109,816	5.9	26,543	82.5	1,224,102	6.9
Electric power.....	32,847	2.2	60,552	3.2	1,660	5.2	593,493	3.3
Manufactures.....	285,831	18.9	824,249	44.0	1,076	3.3	9,605,425	54.3
Construction.....	406,100	26.9	476,800	25.4	—	—	3,343,720	18.9
Totals, 1956.....	1,512,127	100.0	1,875,456	100.0	32,179	100.0	17,701,559	100.0
	Newfoundland		Prince Edward Island		Nova Scotia		New Brunswick	
	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.
1957								
Agriculture.....	—	—	13,749	39.0	24,048	6.1	29,476	9.9
Forestry.....	21,220	11.1	—	—	14,610	3.7	33,213	11.2
Fisheries.....	13,672	7.1	3,550	10.0	23,084	5.8	7,014	2.4
Trapping.....	49	—	2	—	176	—	173	0.1
Mining.....	45,562	23.6	—	—	52,233	13.2	12,856	4.3
Electric power.....	8,805	4.5	1,621	4.6	17,945	4.5	14,724	5.0
Manufactures.....	56,544	29.2	6,580	18.6	175,683	44.4	123,547	41.6
Construction.....	47,280	24.5	9,796	27.8	88,298	22.3	75,605	25.5
Totals, 1957.....	193,131¹	100.0	35,298	100.0	396,077	100.0	296,608	100.0

¹ Excludes agriculture.

² Included with British Columbia.

**5.—Net Value of Production and Percentage Analysis, by Province,
1956 and 1957—concluded**

Industry	Quebec		Ontario		Manitoba		Saskatchewan	
	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.
1957—concluded								
Agriculture.....	247,844	5.4	487,529	6.5	129,141	20.3	293,101	38.6
Forestry.....	178,995	3.9	128,521	1.7	7,150	1.1	4,386	0.6
Fisheries.....	4,068	0.1	7,047	0.1	3,279	0.5	939	0.1
Trapping.....	1,187	--	2,576	--	2,360	0.4	2,143	0.3
Mining.....	238,225	5.1	309,475	4.1	27,679	4.3	130,288	17.1
Electric power.....	185,421	4.0	249,187	3.3	27,476	4.3	23,690	3.1
Manufactures.....	2,947,898	63.7	5,047,711	66.9	273,163	42.9	109,599	14.4
Construction.....	825,349	17.8	1,309,064	17.4	166,940	26.2	196,190	25.8
Totals, 1957.....	4,628,987	100.0	7,541,110	100.0	637,188	100.0	760,335	100.0
	Alberta		British Columbia		Yukon and Northwest Territories		Canada	
	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.
Agriculture.....	278,920	19.4	75,913	4.1	--	--	1,579,721	8.9
Forestry.....	15,852	1.1	258,671	13.8	625	2.1	663,242	3.7
Fisheries.....	854	0.1	30,021	1.6	720	2.4	94,247	0.5
Trapping.....	1,044	0.1	399	--	842	2.8	10,951	0.1
Mining.....	378,209	26.3	88,978	4.8	25,014	82.2	1,308,518	7.3
Electric power.....	36,558	2.5	65,529	3.5	1,807	5.9	632,763	3.6
Manufactures.....	312,037	21.7	767,914	41.1	1,410	4.6	9,822,085	55.1
Construction.....	414,953	28.8	579,897	31.1	1	--	3,713,372	20.8
Totals, 1957.....	1,438,427	100.0	1,867,322	100.0	30,417	100.0	17,824,899	100.0

¹ Included with British Columbia.

Per Capita Value of Commodity Production.—Per capita net value of commodity output in Canada in 1957, at \$1,090, was slightly lower than in 1956. In three provinces the per capita output was higher than the Canadian average; Ontario ranked first with \$1,341, British Columbia second with \$1,250 and Alberta third with \$1,240. Per capita net value of output in the Maritime Provinces was less than half the Canadian average, and Quebec's per capita production was 11 p.c. below the national figure. Saskatchewan, where value of output fluctuates widely with crop conditions, was 21 p.c. below the Canadian average in 1957.

**6.—Per Capita Net Value of Production with Percentage Variation from the
National Average, by Province, 1947, 1950, 1953 and 1955-57**

Province	1947		1950		1953	
	Per Capita Net Value	Variation	Per Capita Net Value	Variation	Per Capita Net Value	Variation
	\$	p.c.	\$	p.c.	\$	p.c.
Prince Edward Island.....	231	-63.6	313	-61.2	322	-67.8
Nova Scotia.....	340	-46.5	409	-49.3	497	-50.4
New Brunswick.....	399	-37.2	474	-41.2	490	-51.0
Quebec.....	563	-11.3	715	-11.3	891	-11.0
Ontario.....	757	+19.2	1,000	+24.1	1,213	+21.2
Manitoba.....	531	-16.4	639	-20.7	697	-30.4
Saskatchewan.....	612	- 8.6	764	- 5.2	1,059	+ 5.8
Alberta.....	687	+ 8.2	829	+ 2.9	1,166	+16.5
British Columbia ¹	770	+21.3	900	+11.7	1,098	+ 9.7
Canada².....	635	...	806	...	1,001	...

For footnotes, see end of table.

6.—Per Capita Net Value of Production with Percentage Variation from the National Average, by Province, 1947, 1950, 1953 and 1955-57—concluded

Province	1955		1956		1957	
	Per Capita Net Value	Variation	Per Capita Net Value	Variation	Per Capita Net Value	Variation
	\$	p.c.	\$	p.c.	\$	p.c.
Prince Edward Island	374	-63.3	397	-64.4	357	-67.3
Nova Scotia.....	503	-50.6	548	-50.9	564	-48.3
New Brunswick.....	530	-48.0	575	-48.5	525	-51.9
Quebec.....	920	- 9.7	982	-12.0	973	-10.8
Ontario.....	1,220	+19.7	1,308	+17.2	1,341	+22.9
Manitoba.....	698	-31.5	808	-27.6	741	-32.1
Saskatchewan.....	954	- 6.4	1,169	+ 4.7	865	-20.7
Alberta.....	1,172	+15.0	1,347	+20.7	1,240	+13.7
British Columbia ¹	1,185	+16.3	1,334	+19.5	1,250	+14.6
Canada².....	1,019	...	1,116	...	1,091	...

¹ Includes the Yukon and Northwest Territories.
 province are not complete.

² Excludes Newfoundland because figures for that

CHAPTER XVII.—LABOUR*

CONSPECTUS

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NOTE.—The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Section 1.—The Government in Relation to Labour

Subsection 1.—Federal Labour Legislation

The federal Department of Labour was established in 1900 under the Conciliation Act which provided machinery to aid in preventing and settling labour disputes and required the Department to collect, compile and publish statistical and other relevant information. The Department also assumed the administration of the Fair Wages Policy adopted in the same year for the protection of workmen employed in the execution of Federal Government contracts and on works aided by grants from public funds.

The statutory duty of disseminating information concerning labour and industrial matters is set out in the Department of Labour Act passed in 1909. In addition, the Minister is responsible for the administration of the following statutes: Conciliation and Labour Act (1906); Government Annuities Act (1908)†; Government Employees Compensation Act (1918); Fair Wages and Hours of Labour Act (1935); Unemployment Insurance Act (1940); Vocational Training Co-ordination Act (1942); Reinstatement in Civil Employment Act (1946); Merchant Seamen Compensation Act (1946); Industrial Relations and Disputes Investigation Act (1948); Canada Fair Employment Practices Act (1953); Female Employees Equal Pay Act (1956); and the Annual Vacations Act (1958).

Fair Wages Policy.—The Fair Wages Policy applying to all Federal Government contracts was first set forth in a Resolution of the House of Commons (1900) and later incorporated in an Order in Council and amended from time to time. Wages and hours on contracts for construction are now regulated by the Fair Wages and Hours of Labour Act and Order in Council P.C. 2029 of Dec. 22, 1954. Hours of work on construction contracts are limited to eight per day and 44 per week, except in an emergency or in exceptional circumstances where exemption is granted by Order in Council; wages to be paid are those current for the type of work in the district or, if there are no current rates, fair and reasonable rates as determined by the Minister of Labour.

* Except as otherwise noted, this Chapter has been revised under the direction of A. H. Brown, Deputy Minister, Department of Labour, Ottawa.

† Statistics and details of administration under this Act are given at pp. 312-313.

Wages and hours of work on contracts for equipment and supplies are also regulated by Order in Council P.C. 2029. The hours of such work must be those fixed by the custom of the trade in the district where the work is performed, or fair and reasonable hours. The wages must be current or fair and reasonable but in no event shall they be less than those established by statute or regulation of the province in which the work is being performed. This Order in Council contains a clause prohibiting discrimination against any person in matters of employment because of that person's race, national origin, colour or religion, or because he has made a complaint or given information with respect to such alleged discrimination.

*Government Prevailing Rate Employees.**—Many departments and agencies of government employ non-office workers in public buildings, defence establishments, parks and forests, experimental farms, canal operation, airports and government vessels, survey parties, special projects, etc. Such positions are exempt from the operations of the Civil Service Act and rates of pay are fixed by the Treasury Board in consultation with the Department of Labour on the basis of prevailing private industry rates for comparable work in the employment area. Data used in the determination of these pay rates are secured from wage surveys made by Industrial Relations Officers of the Department of Labour and wage research conducted by the Economics and Research Branch as well as from collective agreements and information supplied by some provincial Departments of Labour.

The Fair Wages and Prevailing Rates Division of the Industrial Relations Branch also recommends rates of pay for 3,700 commissionaires employed by various government departments and agencies throughout Canada, provides wage data to assist certain Crown corporations in the preparation of their wage schedules, and gives assistance in the establishment of class titles, job descriptions and the application of job evaluation techniques.

Three sets of comprehensive Regulations have been established by the Treasury Board governing the hours of work, overtime, vacations, statutory holidays, sick leave, pensions, etc., for (1) prevailing rate workers generally employed, (2) ships' officers and (3) ships' crews.

The Industrial Relations and Disputes Investigation Act.—This legislation came into effect by proclamation on Sept. 1, 1948, revoking the Wartime Labour Relations Regulations in effect since March 1944 and repealing the Industrial Disputes Investigation Act which had been in force from 1907 until suspended by the Wartime Regulations in 1944. The Act protects proceedings commenced and decisions, orders and certifications made under the wartime legislation in so far as these involve services authorized by the Act.

The Act applies only to industries within federal jurisdiction, viz., navigation, shipping, interprovincial railways, canals, telegraphs, steamship lines and ferries, both international and interprovincial, aerodromes and air transportation, radio broadcasting stations, and works declared by Parliament to be for the general advantage of Canada or of two or more provinces. However, the Act provides that provincial authorities if they so desire may enact similar legislation for application to employees within provincial jurisdiction and make mutually satisfactory arrangements with the Federal Government for the administration of such legislation by the federal authorities.

In general, the Act in its important features provides that employees and employers shall have the right to organize and bargain collectively and that trade unions may be certified as bargaining agents for employee groups. Trade unions and employers are required, upon notice, to bargain collectively in good faith. The Act provides for invoking collective bargaining negotiations and for the mediation of conciliation officers and conciliation boards in reaching collective agreements. Employees may change bargaining agents at times under conditions specified in the Act, which also prescribes conditions affecting the duration and renewal of collective agreements. Collective agreements are required to contain

* Statistics on numbers and earnings of prevailing rate and other groups of federal employees exempt from the Civil Service Act are given at pp. 148-156.

provision for the arbitration of disputes concerning the meaning or violation of such agreements and where such provision is lacking application may be made for its establishment. The Act prohibits unfair labour practices, i.e., the interference with or domination of trade unions by employers or interference, discrimination and coercion in trade union activity. The conditions that must be observed prior to strike and lockout action are provided for in the Act. Industrial inquiry commissions may be appointed to investigate industrial matters or disputes.

The Minister of Labour is charged with the administration of the Act and is directly responsible for the provisions affecting the appointment of conciliation officers, conciliation boards, industrial inquiry commissions, consent to prosecute, and complaints that the Act has been violated or that a party has failed to bargain in good faith.

The Canada Labour Relations Board administers provisions concerning the certification of bargaining agents, the writing of a procedure into a collective agreement for the final settlement of disputes concerning the meaning or violation of such agreement, and the investigation of complaints made to the Minister that a party has failed to bargain collectively.

Detailed statistics concerning activities under the Act may be found in the Annual Report of the Department of Labour. In brief, from Sept. 1, 1948 to Dec. 31, 1959 the Canada Labour Relations Board received 1,104 applications for certification, 652 of which were granted, 217 rejected, 218 withdrawn and 17 were pending at the end of the period. Of the 681 industrial disputes dealt with under the conciliation provisions of the Act, 594 were settled by conciliation officers and conciliation boards, 51 were not settled, 13 lapsed and 21 were pending at Dec. 31, 1959.

Labour-Management Co-operation Service.—During World War II, production committees based on the principle of joint consultation between labour and management were established in many vital industries. Since 1947 the establishment of labour-management production committees in industry has been encouraged and assisted by the Labour-Management Co-operation Service, a division of the Industrial Relations Branch of the Department of Labour. The number of active committees has grown from 526 in 1947 to approximately 1,552 at Dec. 31, 1959. Their activities are directed towards such objects as better understanding between management and labour, improved production efficiency, improved quality, reduction of waste, accident prevention, good housekeeping, and reduction of absenteeism.

Reinstatement in Civil Employment Act.—This Act provides for the reinstatement in their civil employment of discharged members of the Armed Forces and other designated persons. It was originally passed in 1942 and revised in 1946 and is administered by the Minister of Labour through the Unemployment Insurance Commission. In 1954, by the Veterans Benefit Act, the Act was made applicable to certain ex-members of the Special Force and to former members of the regular Forces who had served for a period not exceeding three years after July 5, 1950 and whose enlistment occurred prior to July 1, 1955.

Canada Fair Employment Practices Act.—This Act, which came into effect on July 1, 1953, prohibits discrimination in employment based on race, colour, religion or national origin. It applies only to industries within federal jurisdiction—those covered by the Industrial Relations and Disputes Investigation Act (see p. 749). This law prohibits acts of discrimination by employers; discrimination by trade unions in regard to membership or employment; the use by employers of employment agencies which practise discrimination; and of advertisements or inquiries in connection with employment which express, directly or indirectly, any limitation, specification or preference as to race, colour, religion or national origin.

Female Employees Equal Pay Act.—This Act came into effect on Oct. 1, 1956, and applies to employers and employees engaged in works, undertakings or businesses coming within federal jurisdiction. The Act, in its principal provision, prohibits an

employer from employing a female for any work at a rate of pay that is less than the rate at which a male is employed by that employer for identical or substantially identical work.

Annual Vacations Act.—This Act was passed in January 1958 and became effective by proclamation on Oct. 1, 1958. It provides a one-week vacation with pay for the first year of employment and a two-week vacation for subsequent years. Vacation pay is computed at 2 p.c. of wages, as defined in the Act, for a vacation of one week and 4 p.c. for a vacation of two weeks.

Subsection 2.—Provincial Labour Legislation

Because of the authority given by the British North America Act to provincial legislatures to make laws in relation to local works and undertakings, and in relation to property and civil rights, there is a large body of provincial labour legislation dealing with relations between employers and employees and the trade unions representing employees, working conditions, qualifications of tradesmen, compensation for work accidents, and other matters. In each province a Department of Labour is charged with the administration of labour laws. Legislation for the protection of miners is administered by departments dealing with mines. The workmen's compensation law in each province is administered by a board appointed by the Lieutenant-Governor in Council.

Factory legislation and shops legislation in several of the provinces prohibit child labour, regulate the hours of work of women and young persons, and contain provisions to ensure the safety and protect the health of employees in industrial and commercial establishments. All provinces have minimum wage legislation, and most have legislation establishing maximum working hours in at least some types of employment. The industrial standards legislation in Nova Scotia, New Brunswick, Ontario, Manitoba, Saskatchewan and Alberta enables the wages and hours of work agreed upon at a conference of representatives of employers and employees in designated trades to be made the minimum standards throughout the trade concerned. The Quebec Collective Agreement Act permits certain terms of collective agreements between employers and trade unions to be made binding on all in the industry.

In all provinces there is legislation to protect freedom of association, to promote collective bargaining and to assist in the settlement of industrial disputes. Nine provinces have legislation dealing with apprenticeship and all have legislation providing for the licensing of certain classes of workmen. Seven provinces have equal pay laws, and six have fair employment practices Acts prohibiting discrimination in hiring and conditions of employment and in trade union membership on grounds of race, colour, religion or national origin. All have workmen's compensation laws.

Provincial labour legislation enacted in 1959 is outlined in the following paragraphs.

Newfoundland.—The *Labour Relations (Amendment) Act* empowers the Lieutenant-Governor in Council to dissolve any trade union in the province which is a branch, local or affiliate of a trade union or organization of trade unions outside the province, if it appears to the Lieutenant-Governor in Council that a substantial number of the superior officers, agents or representatives of such union outside Newfoundland have been convicted of any heinous crime, and any or all of them retain offices in the union organization. Where a trade union is dissolved, any collective agreement to which it is a party becomes void and, if it is a certified bargaining agent, its certification is revoked.

The Labour Relations Board is given authority to revoke a union's certification on the following conditions: (1) if any union officer or representative continues in his position after being convicted of an offence against the Criminal Code in connection with a trade dispute or an offence under the Act; (2) if the union itself has been convicted of a breach of the Act; (3) where an employer has been excluded from Sect. 12 (the provision requiring either party to bargain on notice from the other); (4) if an injunction other than an interim injunction has been granted against a union officer, agent, representative or member in

connection with a trade dispute; (5) if a judgment has been given against a union or any of its officers, members, agents or representatives in respect of a tortious act. The Lieutenant-Governor in Council may also revoke a union's certification after due inquiry, in which case the Board is precluded from entertaining a new application for certification without the consent of the Lieutenant-Governor in Council and any collective agreement held by a decertified union is void from the date of revocation of its certificate.

New provisions prohibit strikes and picketing for certain purposes. For a contravention of these new provisions, the penalty is a maximum fine of \$5,000 for a union and \$500 or three months' imprisonment for an individual.

The Act also makes a trade union suable in an action for damages for tortious acts alleged to have been committed by or on behalf of the union, and legally responsible for any act or thing done by a union member or officer.

The *Trade Union (Emergency Provisions) Act* revoked the certification of two locals of the International Woodworkers of America, declared void any collective agreement in force between these locals and employers and prohibited the re-certification of these two locals without the consent of the Lieutenant-Governor in Council.

The *Boiler and Pressure Vessel Act* was amended to provide for the establishment of a Board of Examiners to examine candidates for engineers' or firemen's certificates and for the setting up of a tripartite advisory committee to hear appeals and to advise the Minister with respect to the administration of the Act. Provision is made for the issuance of welders' certificates of proficiency.

Prince Edward Island.—A *Women's Minimum Wage Act* was passed, providing for the fixing of minimum rates by the Labour Relations Board established under the Trade Union Act, subject to the approval of the Lieutenant-Governor in Council. The Act covers all female employees except farm workers and domestic servants but the Board may exempt other employees from the operation of the Act or of any minimum wage order.

An *Equal Pay Act* was enacted prohibiting employers from discriminating between male and female employees by paying a female employee at a lower rate than a male employee for the same work done in the same establishment. A complaint that the Act has been violated may be made to the Labour Relations Board.

An amendment to the *Trade Union Act* provides for the establishment of a tripartite Labour Relations Board. The Board will deal with certification of unions as bargaining agents and perform such other functions as the Lieutenant-Governor in Council may designate.

An amendment to the *Workmen's Compensation Act* raises the lump sum payment to a widow from \$100 to \$200.

Nova Scotia.—The *Fair Employment Practices Act*, formerly restricted to employers with five or more employees, was amended to apply to any employer who employs one or more persons.

An amendment to the *Workmen's Compensation Act* increased the rate of compensation for disability from 70 to 75 p.c. of earnings and established the maximum earnings base at \$3,600. The minimum weekly payment for temporary total disability was increased to \$20 or earnings if less. In fatal cases, the allowance for funeral expenses was raised from \$200 to \$250, the lump sum payment to a widow from \$110 to \$150, the widow's monthly allowance from \$50 to \$60, and the monthly allowance for a dependent child from \$20 to \$22.50. The increased benefits to widows and children are made applicable to existing pensioners as well as to new awards. Coal miners' pneumoconiosis is added to the schedule of industrial diseases and compensation made payable under substantially the same conditions as for silicosis. The Workmen's Compensation Board is authorized to make regulations providing for periodic X-ray examination of workmen exposed to silica dust or coal dust and for the issuance of certificates of fitness following such examination. Other amendments provide greater protection for workmen in the fishing and dredging industry where an employer is individually liable for the payment of compensation,

raising the maximum liability with respect to claims related to one vessel from \$50,000 to \$200,000 and removing the former \$1,200 limit on the earnings of sharesmen deemed to be wages for compensation purposes.

New Brunswick.—An amendment to the *Workmen's Compensation Act* increased the monthly allowance for a child to \$20 and for an orphan to \$40. The amount allowed for funeral expenses was raised from \$200 to \$300. The minimum payment for temporary disability was increased from \$15 to \$25 a week, or earnings if less. All increases came into force on Jan. 1, 1960.

The *Labour Regulations Act* was amended to cover municipal employees except those specifically excluded by resolution of a municipality.

A new *Stationary Engineers Act* was passed which, among other changes, provides for the issue of "learner" type operator permits for a period of up to six months, requires the annual inspection of insured boilers and pressure vessels, lays down the qualifications required for inspectors' certificates of competency, sets out more explicitly than formerly the powers of inspectors, and requires the reporting of accidents.

Quebec.—The *Trade-Schools Act* was replaced by the *Private Vocational Schools Act* which provides for closer government supervision of private schools giving vocational training.

The *Workmen's Compensation Act* was amended to raise from \$4,000 to \$5,000 the maximum annual earnings on which compensation may be based, and also raised the benefits payable to dependants in fatal cases. The monthly allowance to a widow was increased from \$55 to \$75, for a dependent child from \$20 to \$25, and for an orphan child from \$30 to \$35. The allowance for funeral expenses was raised from \$200 to \$400, and the lump sum payment to a widow from \$200 to \$300. Benefits to dependants are made applicable also to persons receiving allowances by reason of past accidents. The increased rates took effect Jan. 1, 1960.

Ontario.—The *Mining Act* was amended to impose additional safety requirements in connection with such matters as blasting operations and control of vehicle traffic underground and to provide for the establishment of compulsory standards for conveyor belts.

The *Trade Schools Regulation Act* was amended to authorize more supervision of private vocational or trade schools, particularly with regard to registration practices, and the safety of school premises and equipment.

Manitoba.—The *Vacations with Pay Act*, which had provided for a one-week vacation with pay after one year of service with an employer and a two-week vacation after three years of service, was amended to provide for a vacation of two weeks with pay after one year of service.

An amendment to the *Labour Relations Act* gives a trade union the right to prosecute in its own name for an offence under the Act.

The *Workmen's Compensation Act* was substantially amended, increasing the ceiling on annual earnings from \$3,500 to \$4,500 and raising the minimum weekly payment for temporary total and permanent total disability from \$15 to \$25, or earnings if less, and reducing the "waiting period" to one day. The lump sum payable to a widow was increased from \$200 to \$300 and the monthly pension from \$65 to \$75. The allowance for a dependent child was raised from \$25 to \$35 and for an orphan from \$35 to \$45. Increases in compensation to widows and children were made applicable to existing as well as new pensions. The coverage of the Act was also extended.

Saskatchewan.—The *Queen's Bench Act* was amended to abolish *ex parte* injunctions in connection with labour disputes.

The *Fair Employment Practices Act* was amended to strengthen the provisions regarding advertisements, application forms and inquiries in connection with employment. They now prohibit not only any direct or indirect expression of discrimination but also any expression of intent to discriminate on grounds of race, religion, colour or national origin. The

amendment further provides that no person may include in an application form, advertisement or inquiry a question or request for particulars as to an applicant's race, religion, colour or national origin unless the question or request is based upon a *bona fide* occupational qualification.

The *Annual Holidays Act*, which provided for a two-week vacation after one year of service with one employer and three weeks after five years, was amended to extend the benefits of a three-week vacation to persons whose employment with the same employer has not been continuous. A new provision states that an employee is entitled to a three-week vacation with pay after five "accumulated" years of employment, provided that no break in his service has exceeded six months (182 days).

The *Workmen's Compensation Act* was amended to increase the lump sum payable to a widow from \$250 to \$300 and to provide for the payment of a sum not exceeding \$50 for a burial plot, and for the payment of a lump sum not exceeding \$50, at the discretion of the Workmen's Compensation Board, to each orphan child under 16 to meet expenses arising from the death of the parent. The minimum weekly payment for permanent and temporary total disability was increased from \$25 to \$30, or earnings if less. All increases in compensation are effective from July 1, 1959. The conditions laid down for the payment of compensation for silicosis were relaxed so that the period of exposure necessary to qualify for benefits is now three years instead of five.

Alberta.—The *Master and Servants Act* was amended to improve the procedure for collection of wages pursuant to a court order.

The *Apprenticeship Act* was amended to prohibit any employment in a designated trade by a person eligible to be an apprentice (apart from employment under apprenticeship contract) except with the permission of the Board.

Legislation was enacted dividing the Department of Industries and Labour into two separate Departments, each with its own Minister.

British Columbia.—The *Trade-unions Act* replaced legislation of the same title. Both trade unions and employers' organizations are declared legal entities for purposes of prosecuting and being prosecuted for offences against the Labour Relations Act and for purposes of suing and being sued under the Trade-unions Act. An employers' organization, a trade union or other person who fails to comply with the Labour Relations Act or the Trade-unions Act is declared to be liable in damages to anyone injured thereby, and the act of any member of an employers' association or trade union is presumed, unless otherwise shown, to be authorized by the employers' organization or trade union. The new Act also sets out the circumstances in which picketing and other forms of persuasion may legally be carried on, limiting it to legal strikes and to lockouts, and to premises where an actual dispute is in progress, further providing that it may be carried on only by the union whose members are on strike or locked out. All other picketing or other forms of persuasion directed against an employer are contrary to the Act.

The Act also prohibits the use of *ex parte* injunctions to restrain a union or other person from any act relating to a legal strike or lockout except where necessary to safeguard public order or to prevent substantial or irreparable damage to property, in which case such an injunction may be granted for a period of not more than four days. Another provision removes trade unions from the law of civil conspiracy, stating that no act done by two or more members of a trade union is actionable, if done in contemplation or furtherance of a labour dispute, unless the act would be wrongful if done without any agreement or combination.

An amendment to the *Constitution Act*, to be brought into effect by proclamation, prohibits all picketing designed to persuade anyone temporarily to withdraw his services from the provincial government or any of its departments or, with certain exceptions, from any Board or Commission appointed by an Act of the Legislature or by the Lieutenant-Governor in Council. Picketing designed to persuade a provincial civil servant from doing anything or to refrain from doing anything in contravention of his oath of office or of the statute from which his duties devolve is also prohibited.

Extensive changes were made in the *Workmen's Compensation Act*. The ceiling on annual earnings for compensation purposes was raised from \$4,000 to \$5,000 and the waiting period reduced to three days. In fatal cases, the lump sum payment to a widow was increased from \$100 to \$250 and the monthly pension from \$75 to \$90. The monthly allowance for a child was raised from \$25 to \$35 and that for an orphan from \$30 to \$40. The new rates for dependants are applicable to existing pensioners. The definition of "silicosis" was also revised to make conditions for the establishment of a claim for compensation for the disease less stringent. The coverage of the Act was extended.

Amendments to the *Boiler and Pressure-vessel Act* prohibit the installation or alteration of a low-pressure boiler plant without a permit and change the duties which a boiler operator Class A is qualified to perform.

Regulation of Wages and Hours of Labour under Industrial Standards Legislation and the Quebec Collective Agreement Act.—The Industrial Standards Acts of Nova Scotia, New Brunswick, Ontario and Saskatchewan and the Labour Act of Alberta provide that wages and hours agreed upon at a conference of representatives of employers and employees, called by the Minister of Labour or his representative, may be made legally binding by Order in Council on the industry in the area concerned. The Nova Scotia Act applies only to construction work at Halifax, Dartmouth and Sydney.

In *Nova Scotia*, 13 schedules of hours and wages for individual building trades were in force during the year ended Mar. 31, 1958.

In *New Brunswick*, four schedules for individual building trades were in force during the year ended Mar. 31, 1958.

In *Quebec*, under the Collective Agreement Act, hours and wages and also apprenticeship, vacations with pay and family allowances provisions, established by a collective agreement voluntarily entered into by employers and unions or groups of employees, may be made legally binding by Order in Council on all employers and employees in the industry in the district covered by the agreement, if the parties are sufficiently representative of the industry. At Mar. 31, 1958, 102 agreements covering 262,867 workers and 28,056 employers had been generalized to apply either throughout the province or to a certain district. The agreements in force throughout the province apply to the following industries: building materials, the manufacture of women's cloaks and suits, dresses, millinery, ladies' handbags, men's and boys' clothing, men's and boys' hats and caps, men's and boys' shirts, fine gloves and work gloves, shoes, furniture, paint, corrugated and uncorrugated paper boxes, the tanning industry, the elevator construction industry, and the casket manufacturing industry. Other agreements concern industries in particular cities or parts of the province including all building trades and printing trades in large urban centres and many rural districts.

In *Ontario*, there were 128 wages and hours schedules in force at Mar. 31, 1958. Throughout the province schedules were in effect for the ladies' cloak and suit industry, the men's and boys' clothing industry, men's and boys' hats and caps, the millinery industry and the hard furniture industry. In the construction industry, 53 schedules, each for a

single trade in a single locality, covered one or more trades in 26 zones. Four schedules were in effect for certain zones in the retail gasoline service industry, and barbers had schedules in 64 zones.

In *Manitoba*, the Fair Wage Act provides similar machinery for fixing wages and hours in any business, trade or undertaking except agriculture. Orders in Council under this legislation have been passed fixing wages and hours in the barbering and hair-dressing trades. A schedule for the construction industry applies to private construction work in the larger centres of population as well as to public construction work throughout the province.

In *Saskatchewan*, 22 schedules were in effect at Mar. 31, 1958. The schedule for barbers covered the whole province; others applied to bakers and bakery salesmen, carpenters, electrical workers, painters, shoe repairers and beauty culture operators in one or more areas.

In *Alberta*, 28 schedules were in effect during 1958. These governed, in one or more areas, bakers and bakery salesmen, certain individual building trades, dairy employees, garage and service-station workers, radio service, laundry and dry-cleaning employees and barbers.

Regulation of Hours and Annual Holidays.—Five provinces—Ontario, Manitoba, Saskatchewan, Alberta and British Columbia—have statutes that either place absolute limits on working hours or require time and one-half the regular rate to be paid if work is continued after specified limits. There is, in addition, an Act of limited application in Quebec. In the provinces that have no special hours-of-work legislation, the only statutory regulation of hours, apart from that described on p. 755 under the Industrial Standards Acts and the Quebec Collective Agreement Act, is that imposed by factories Acts, mines Acts and, in Newfoundland, an Act governing shops. In New Brunswick and Quebec the limits imposed by the factories Acts apply only to women and boys under 18 years of age. Several minimum wage Acts give authority for the regulation of hours as well as of wages.

In Ontario there is a maximum eight-hour day and 48-hour week with certain exceptions. In Alberta the maximum daily and weekly hours in the cities of Calgary, Edmonton, Lethbridge and Medicine Hat are eight and 44; in the remainder of the province they are eight and 48. In British Columbia hours are limited to eight in a day and 44 in a week. In these three provinces the Acts apply to most workers except farm labourers and domestic servants. In Saskatchewan the Act requires time and one-half to be paid for work after eight hours daily and 44 hours weekly and applies to workers in all industries except agriculture and domestic service. A Manitoba Act covering most industrial workers in the province requires time and one-half to be paid for work done after eight hours in a day and after 48 hours in a week for men and 44 hours for women. In all provinces that have Acts regulating hours, longer hours may be worked in an emergency or by permission of the administrative authority.

Seven provinces—Nova Scotia, Quebec, Ontario, Manitoba, Saskatchewan, Alberta and British Columbia—have legislation in effect providing for annual holidays with pay for workers in most industries, and New Brunswick has legislation requiring annual holidays in the mining and construction industries and for fish, fruit and vegetable packers. In all these provinces, except British Columbia, Saskatchewan and Manitoba, workers are entitled to a one-week holiday with pay after a year of employment. A two-week holiday is given in British Columbia, Saskatchewan and Manitoba after a year of employment and in Alberta after two years except in the case of workers in the highway, pipeline and heavy

construction industries who are entitled to a two-week vacation after one year of service. A three-week holiday is required in Saskatchewan after five years of service with the same employer. A worker employed for less than a year is entitled, in Quebec, to a half-day for each month of employment and, in Saskatchewan, to one day for each month. Coal miners in Alberta are entitled to a one-day holiday with pay for every 20 days worked in a month but not more than two weeks in a year.

Farm workers are excluded from the holiday provisions in all provinces, and domestic servants in all but Manitoba and Saskatchewan. In addition, Quebec exempts public corporation employees, salesmen, janitors and watchmen, and certain part-time workers. Ontario exempts professional workers, salesmen, and funeral directors and embalmers. Manitoba and Saskatchewan exempt ranch and market garden employees, and British Columbia exempts professional workers and horticultural workers.

Minimum Wage Regulations.—In Nova Scotia the minimum wage law applies only to women. In Ontario, though the Act applies to both sexes, Orders apply only to women. In Newfoundland, New Brunswick and Alberta there are separate Orders for men and women and lower rates are set for women. In British Columbia all but a few Orders set the same rates for men and women. The Manitoba Order sets lower rates for women than for men. In Quebec and Saskatchewan all Orders and the rates set apply to both sexes.

Table 1 shows the minimum rates in effect in December 1959 for several classes of establishment in the principal cities. In Newfoundland, New Brunswick, British Columbia and, with respect to men in Manitoba, the rates set are for the entire province. Elsewhere rates vary according to zone.

1.—Minimum Wage Rates for Experienced Workers in Certain Cities, by Sex, December 1959

Item and Type of Establishment	St. John's, Nfld.	Halifax, N.S.	Saint John, N.B.	Montreal, Que.	Toronto, Ont.	Winnipeg, Man.	Regina, Sask.	Edmonton, Alta.	Vancouver, B.C.
Maximum hours per week to which the rates apply.	M. 48 F. 48	— 48	48 48	48-60 ¹ 48-60 ¹	— 48	48 44	44 44	44 44	44 44
	cts. per hour	\$ per week	cts. per hour	cts. per hour	\$ per week	cts. per hour	\$ per week	\$ per week	cts. per hour
Factories.....	M. 50 F. 35	— 21.60	65 ² 50	60 60	— 22	60 58	30 30	30 28	75 60
Laundries, etc.....	M. 50 F. 35	— 21.60	— 50	60 60	— 22	60 58	30 30	30 28	75 75
Shops.....	M. 50 F. 35	— 21.60	— 50	60 60	— 22	60 58	30 30	30 28	65 65
Hotels, restaurants, etc.	M. 50 F. 35	— 21.60	— 45	55 ³ 55	— 22	60 58	30 30	30 28	65 65
Beauty parlours.....	M. 50 F. 35	— 21.60	— 50	60 60	— 22	60 58	30 30	30 28	35.00 ⁴ 35.00 ⁴
Theatres and amusement places.	M. 50 F. 35	— 21.60	— 50	60 60	— 22	60 58	30 30	30 28	18.00 ⁴ 18.00 ⁴
Offices.....	M. 50 F. 35	— 21.60	— 50	60 60	— 22	60 58	30 30	30 28	75 75

¹ Rates apply to 48 or 54 hours in factories; 48 hours in offices; 54 hours in laundries, shops, beauty parlours and theatres; 60 hours in hotels. ² Applies only to canning or processing of fish, vegetables or fruit. ³ Chauffeurs, watchmen, stationary enginemen and firemen 60 cents; bell boys 35 cents. ⁴ Dollars per week.

Section 2.—The Labour Force

The current pace of economic activity in Canada necessitates constant planning and study. To the labour leader, the business man, the social administrator and the legislator, this pace requires a continuous process of plan-revision. To provide up-to-date and reliable information concerning the Canadian labour force, a current and periodic analysis of the state of employment in Canada was organized. A labour force survey, on a sample basis, was conducted in the autumn of 1945 and quarterly surveys were carried on until November 1952, when the survey was placed on a monthly basis. A multi-stage area sample was used involving the selection of progressively smaller sample areas and ultimately of households. Random methods of choice were used at every stage of selection so that all members of the population had an equal chance of inclusion. The present sample covers over 35,000 households in more than 160 different areas of Canada. The estimates of the labour force are restricted to the civilian labour force; net strength of the Armed Forces is obtainable directly from official sources. Inmates of institutions and Indians living on reserves are excluded.

The labour force surveys provide a classification of persons 14 years of age or over on the basis of their activity during the week that precedes the beginning of the survey, and who had jobs or were seeking work during the survey week. These divisions of the labour force are defined as follows:—

- (1) **Persons with Jobs.**—This category comprises: (a) persons at work—those who did any work for pay or profit or who did unpaid work which contributed to the running of a farm or business operated by a relative; and (b) persons with jobs but not at work—those who had jobs but did not work because of illness, bad weather, vacation, industrial dispute or temporary layoff with definite instructions to return to work within 30 days of the time of being laid off. Persons who worked part of the survey week and also looked for work are classed as "persons with jobs".
- (2) **Persons without Jobs and Seeking Work.**—This classification includes those persons who were looking for work during the survey week and did not work. Persons who were temporarily away from their jobs during the whole of the survey week seeking other work were considered as without jobs and were included in this category. In addition to those who were actively looking for work, this classification includes persons who would have looked for work, except that they were temporarily ill, were on indefinite or prolonged layoff, or believed that no work was available.

Information relating to the population 14 years of age or over not in the labour force is also collected. Persons not in the labour force include such groups as those going to school or keeping house in their own homes, persons who are permanently unable to work because of old age or other reason, and persons who are retired or voluntarily idle. Persons such as housewives, students and others who worked part time are classed as "persons with jobs" or, if looking for work, they are classed as "persons without jobs and seeking work".

The estimates derived from the labour force surveys are subject to sampling error. In general the percentage of error tends to decrease as the size of the estimate increases. The chances are about 19 out of 20 that the difference between the estimate and the figure which would have been obtained from a complete count is less than that shown below.

<i>Size of Estimate</i>	<i>Sampling Variability</i>
50,000.....	8,000
100,000.....	11,000
500,000.....	24,000
1,000,000.....	33,000
5,000,000.....	58,000

Data in Table 2 for June 1, 1946 to 1959 are compiled from labour force surveys conducted in late May or early June of those years. The information for years before 1946 is taken from estimates based upon 1931 and 1941 Census material rearranged according to the definitional system used in the labour force surveys, the revised census data being linked with the June 1946 survey on the basis of monthly and annual employment and unemployment figures.

2.—Estimates of the Civilian Labour Force and its Main Components, June 1, 1939-59

NOTE.—Figures do not include persons in institutions and Indians on reserves.

Year	Civilian Population (14 years of age or over)	Civilian Labour Force (14 years of age or over)							Persons not in the Labour Force (14 years of age or over)
		Persons with Jobs					Persons without Jobs and Seeking Work	Total Labour Force	
		Non-agriculture			Agri- culture	Total (with jobs)			
		Paid Workers	Other ¹	Total (non-agri- culture)					
	'000	'000	'000	'000	'000	'000	'000	'000	
1939.....	8,122	2,079	662	2,741	1,379	4,120	529	4,649	3,473
1940.....	8,140	2,197	643	2,840	1,344	4,184	423	4,607	3,533
1941.....	8,086	2,566	481	3,047	1,224	4,271	195	4,466	3,590
1942.....	8,085	2,801	494	3,295	1,139	4,434	135	4,569	3,516
1943.....	7,871	2,934	439	3,373	1,118	4,491	76	4,567	3,304
1944.....	7,920	2,976	373	3,349	1,136	4,485	63	4,548	3,372
1945.....	8,048	2,937	366	3,303	1,144	4,447	73	4,520	3,528
1946.....	8,768	2,986	481	3,467	1,271	4,738	124	4,862	3,906
1947.....	8,993	3,139	551	3,690	1,172	4,862	92	4,954	4,039
1948.....	9,123	3,225	543	3,768	1,186	4,954	81	5,035	4,088
1949.....	9,254	3,326	551	3,877	1,114	4,991	101	5,092	4,162
1950 ²	9,610	3,429	561	3,990	1,066	5,056	142	5,198	4,412
1951.....	9,696	3,625	539	4,164	991	5,155	81	5,236	4,460
1952.....	9,933	3,795	517	4,312	927	5,239	105	5,344	4,589
1953.....	10,127	3,842	531	4,373	898	5,271	115	5,386	4,741
1954.....	10,362	3,825	537	4,362	893	5,255	221	5,476	4,886
1955.....	10,571	3,977	521	4,498	873	5,371	214	5,585	4,986
1956.....	10,771	4,219	534	4,753	819	5,572	166	5,738	5,033
1957.....	11,066	4,450	552	5,002	772	5,774	196	5,970	5,096
1958.....	11,333	4,493	518	5,011	739	5,750	370	6,120	5,213
1959.....	11,531	4,571	557	5,128	724	5,852	334	6,186	5,345

¹ Employers, 'own-account' and unpaid family workers.

² Newfoundland included from 1950.

Main Characteristics of the Civilian Labour Force, 1946-59.—At the beginning of June 1959 the civilian non-institutional population 14 years of age or over was 11,531,000, an increase of 32 p.c. over the June 1, 1946 population of 8,768,000. In the same period the civilian labour force increased 27 p.c. from 4,862,000 to 6,186,000. The proportion of the population 14 years of age or over in the labour force at the beginning of June 1959 was 53.6 p.c. as compared with 55.5 p.c. in June 1946. A higher average school-leaving age and an increased proportion of the population in the age group 65 years or over were mainly responsible for this decrease in the rate of labour-force participation. The effect of these factors was modified by the increased proportion of married women having jobs outside the home.

Persons with jobs increased 24 p.c. to 5,852,000 at the beginning of June 1959 from 4,738,000 in 1946. Employment in agriculture declined continuously over the period from 1,271,000 in 1946 to 724,000 in 1959, a decrease of 43 p.c. Non-agricultural employment, on the other hand, increased 48 p.c. from 3,467,000 in 1946 to 5,128,000 in 1959; paid workers employed in non-agricultural industries increased by 53 p.c. The number of persons without jobs and seeking work fluctuated over the period; the proportion of the labour force in this category at the beginning of June 1959 was 5.4 p.c. as compared with 2.6 p.c. at June 1, 1946.

The number of persons not in the labour force at the beginning of June 1959 was 5,345,000, a figure 37 p.c. higher than on June 1, 1946. The increase in this category was most marked for students.

While the proportion of males 14 years of age or over in the labour force decreased from an average of 85.2 p.c. in 1946 to 81.1 p.c. in 1959, the proportion of females in the labour force showed an increase from 24.7 p.c. to 26.7 p.c. Of the total females with jobs, an average of 27.2 p.c. in 1946 were married women; this proportion rose steadily year by year, reaching 44.9 p.c. in 1959.

The decline in agricultural employment relative to the population was large for both males and females. In 1946, 23.4 p.c. of the male population 14 years of age or over was employed in agriculture; by 1959 the proportion had dropped to 11.2 p.c. The decrease for females was relatively greater. Both males and females showed increases in the percentage of the population in non-agricultural employment even though for males the labour force participation rate decreased and the percentage of persons without jobs and seeking work nearly doubled. The proportion of males not in the labour force increased from 14.8 p.c. in 1946 to 18.9 p.c. in 1959; students advanced from 5.5 p.c. to 7.2 p.c. during the period. For females, the proportion not in the labour force decreased from 75.3 p.c. in 1946 to 73.3 p.c. in 1959. Females keeping house increased from 63.2 p.c. in 1946 to 66.7 p.c. in 1953 and by 1959 had dropped to 62.3 p.c. Females attending school increased over the period from 5.1 p.c. to 6.4 p.c. while the remainder of the category decreased from 7.0 p.c. to 4.6 p.c.

In 1946, 14.1 p.c. of the males and 14.4 p.c. of the females 14 years of age or over were in the 14-to-19-year age group. These percentages decreased gradually for five years, held steady for some time and in the following two years gave indication of increasing in line with the wartime increase in the birth rate. The proportion of males aged 65 years or over increased from under 10 p.c. in 1946 to about 11 p.c. in 1952, held steady until 1956 and then decreased somewhat; for females, the proportion 65 years or over increased from 9.5 p.c. in 1946 to 11.1 in 1959. There was little change during the period in the relative size of the 20-to-64 group for either sex.

3.—Percentage Distribution of the Population 14 Years of Age or Over in Labour Force and Non-labour Force Categories, by Sex, 1946-59

NOTE.—Percentages are annual averages; those for 1946-52, inclusive, are based on estimates from quarterly surveys and those for 1953-59 on monthly estimates.

Sex and Year	Population (14 years or over)	Labour Force				Not in Labour Force			
		With Jobs		Without Jobs and Seeking Work	Total	Females Keeping House	Persons Going to School	Other ¹	Total
		Agric- culture	Non- agri- culture						
Males—									
1946.....	100.0	23.4	59.0	2.8	85.2	...	5.5	9.3	14.8
1947.....	100.0	21.5	61.8	1.8	85.1	...	5.3	9.6	14.9
1948.....	100.0	21.1	62.1	1.9	85.1	...	5.2	9.7	14.9
1949.....	100.0	20.9	61.8	2.4	85.1	...	5.0	9.9	14.9
1950.....	100.0	19.5	61.6	2.9	84.0	...	5.1	10.9	16.0
1951.....	100.0	17.8	64.3	1.8	83.9	...	5.0	11.1	16.1
1952.....	100.0	16.6	64.6	2.2	83.4	...	5.4	11.2	16.6
1953.....	100.0	16.1	64.4	2.4	82.9	...	5.6	11.5	17.1
1954.....	100.0	16.2	62.0	4.0	82.2	...	5.8	12.0	17.8
1955.....	100.0	14.8	63.5	3.8	82.1	...	6.0	11.9	17.9
1956.....	100.0	13.6	65.7	2.9	82.2	...	6.2	11.6	17.8
1957.....	100.0	12.7	65.5	4.1	82.3	...	6.3	11.4	17.7
1958.....	100.0	11.6	63.8	6.3	81.7	...	6.8	11.5	18.3
1959.....	100.0	11.2	64.6	5.3	81.1	...	7.2	11.7	18.9
Females—									
1946.....	100.0	3.6	20.6	0.5	24.7	63.2	5.1	7.0	75.3
1947.....	100.0	3.2	20.5	0.4	24.1	64.7	5.0	6.2	75.9
1948.....	100.0	2.7	20.4	0.4	23.5	65.8	5.2	6.0	76.5
1949.....	100.0	2.2	21.0	0.4	23.6	65.9	4.9	5.6	76.4
1950.....	100.0	1.6	21.1	0.5	23.2	65.9	5.0	5.9	76.8
1951.....	100.0	1.5	21.6	0.4	23.5	66.1	4.9	5.5	76.5
1952.....	100.0	1.3	22.0	0.4	23.7	65.7	4.9	5.7	76.3
1953.....	100.0	0.8	22.3	0.3	23.4	66.7	5.3	4.6	76.6
1954.....	100.0	0.8	22.3	0.6	23.7	66.5	5.3	4.5	76.3
1955.....	100.0	0.7	22.6	0.6	23.9	66.0	5.5	4.6	76.1
1956.....	100.0	0.7	23.7	0.5	24.9	64.9	5.5	4.7	75.1
1957.....	100.0	0.7	24.6	0.5	25.8	63.9	5.7	4.6	74.2
1958.....	100.0	0.9	24.5	0.9	26.3	63.2	6.1	4.4	73.7
1959.....	100.0	0.8	25.2	0.7	26.7	62.3	6.4	4.6	73.3

¹ Includes mainly retired persons, persons voluntarily idle, and persons permanently unable or too old to work.

4.—Percentage Distribution of the Population 14 Years of Age or Over, in the Labour Force, by Age Group and Sex, 1946-59

(See headnote to Table 3.)

Year	Males				Females			
	14-19 Years	20-64 Years	65 Years or Over	All Ages	14-19 Years	20-64 Years	65 Years or Over	All Ages
1946.....	14.1	76.1	9.8	100.0	14.4	76.1	9.5	100.0
1947.....	13.8	76.3	9.9	100.0	14.0	76.2	9.8	100.0
1948.....	13.5	76.3	10.2	100.0	13.6	76.4	10.0	100.0
1949.....	13.2	76.3	10.5	100.0	13.3	76.5	10.2	100.0
1950.....	13.1	76.2	10.7	100.0	13.1	76.5	10.4	100.0
1951.....	12.8	76.3	10.9	100.0	12.8	76.6	10.6	100.0
1952.....	12.7	76.3	11.0	100.0	12.7	76.6	10.7	100.0
1953.....	12.7	76.3	11.0	100.0	12.6	76.6	10.8	100.0
1954.....	12.7	76.2	11.1	100.0	12.6	76.5	10.9	100.0
1955.....	12.7	76.2	11.1	100.0	12.7	76.3	11.0	100.0
1956.....	12.8	76.1	11.1	100.0	12.8	76.1	11.1	100.0
1957.....	13.1	76.0	10.9	100.0	13.0	75.9	11.1	100.0
1958.....	13.5	75.7	10.8	100.0	13.3	75.6	11.1	100.0
1959.....	13.9	75.5	10.6	100.0	13.6	75.3	11.1	100.0

5.—Percentages of Females with Jobs, Married and Other Than Married, in Agriculture, in Non-agriculture and in All Industries, 1946-59

(See headnote to Table 3.)

Year	Agriculture			Non-agriculture			All Industries		
	Married	Other	Total	Married	Other	Total	Married	Other	Total
1946.....	54.2	45.8	100.0	22.5	77.5	100.0	27.2	72.8	100.0
1947.....	53.1	46.9	100.0	22.4	77.6	100.0	26.6	73.4	100.0
1948.....	56.5	43.5	100.0	23.7	76.3	100.0	27.5	72.5	100.0
1949.....	55.3	44.7	100.0	25.1	74.9	100.0	28.0	72.0	100.0
1950.....	59.6	40.4	100.0	26.8	73.2	100.0	29.1	70.9	100.0
1951.....	61.7	38.3	100.0	28.2	71.8	100.0	30.3	69.7	100.0
1952.....	60.5	39.5	100.0	30.0	70.0	100.0	31.7	68.3	100.0
1953.....	51.3	48.7	100.0	32.8	67.2	100.0	33.5	66.5	100.0
1954.....	52.9	47.1	100.0	34.8	65.2	100.0	35.4	64.6	100.0
1955.....	50.8	49.2	100.0	37.0	63.0	100.0	37.4	62.6	100.0
1956.....	57.3	42.7	100.0	38.8	61.2	100.0	39.3	60.7	100.0
1957.....	59.5	40.5	100.0	40.6	59.4	100.0	41.1	58.9	100.0
1958.....	67.8	32.2	100.0	42.6	57.4	100.0	43.5	56.5	100.0
1959.....	68.7	31.3	100.0	44.1	55.9	100.0	44.9	55.1	100.0

Section 3.—Employment, Earnings and Hours*

Subsection 1.—Historical Commentary

Monthly reports on employment have been furnished for many years to the Dominion Bureau of Statistics by establishments usually employing 15 persons or over in the following major industrial divisions: forestry; mining; manufacturing; construction; transportation, storage and communication; public utility operation; trade; finance, insurance and real estate; and certain branches of the service industry, mainly hotels and restaurants, laundries and dry-cleaning plants, recreational and business services. The surveys relate to all sectors of the eight industrial divisions first named. To supplement the employment record that goes back to 1921, monthly statistics of weekly payroll disbursements have been prepared since 1941, permitting calculation of per capita weekly wages and salaries. Subsequently, these series were carried back, on an annual basis only, to 1939.

* Prepared in the Employment Section, Labour Division, Dominion Bureau of Statistics.

The current survey was further extended in the late months of 1945 to include information on earnings and hours of wage-earners for whom industrial establishments can furnish statistics of hours actually worked and paid for during periods of absence. Commencing in 1946, monthly figures of employment have been published separately for men and women. Additional and more detailed data on earnings and hours of work of both wage-earners and salaried employees are collected annually from manufacturers for the last week in October; this series yields separate figures for men and women in the two categories.

The statistics obtained monthly since 1941 relate to all paid workers on the staffs of respondents and their pay for services rendered or during paid absences in their last pay periods in the month, except that casual employees on strength for less than one day in the pay period are omitted. Statistics for owners are excluded by definition, even though they receive part of the return on their investment in the form of salaries. The earnings include wage and salary payments for straight-time and overtime work, shift differentials, regularly paid production, incentive and cost-of-living bonuses and commissions. Payrolls and hours reported for periods exceeding one week are reduced to weekly equivalents.

Although the surveys are restricted to establishments usually employing 15 persons or more, they include high but variable proportions of all paid workers at work in the covered industries as enumerated in the 1951 Census. The estimates of coverage in Canada range from 45 p.c. in the included service groups to 92 p.c. in manufacturing and 96 p.c. in mining, with the industrial composite figure relating to 79 p.c. of the total number in the industries surveyed. It is also estimated that the establishments contributing to the monthly record employed 62 p.c. of the total number of paid workers enumerated in all industries, including those in agriculture, fishing and trapping, education, health, government and other services excluded from the surveys, as well as employees of small establishments in the covered industries for which monthly data are not obtained.

Industrial employment averaged about 1.5 p.c. higher in 1959 than in 1958, but was 2.4 p.c. below the 1957 all-time high. The monthly employment indexes (1949=100) in the three years averaged 119.7, 117.9 and 122.6, respectively. Most industry divisions surveyed participated in the increase in 1959 over 1958, the exceptions being mining and transportation, storage and communication. On the average, mining employment was virtually unchanged between the two years and the annual figure for transportation, storage and communication declined by 1 p.c.

For a number of years, index numbers of industrial employment have been compiled separately for men and women. The year-to-year trends for workers of the two sexes have followed the same direction, but on some occasions the changes have differed in magnitude. Thus in 1958 the index for men fell from 1957 by 4.6 p.c. to 116.7, and that for women by only 1.4 p.c. to 122.0. The 1959 indexes were 118.6 and 123.5, respectively, showing relatively similar percentage increases of 1.6 p.c. and 1.2 p.c. over 1958. The greater stability of employment in industries largely staffed by women than in those requiring mainly male labour contributes materially to the smaller variations usually shown in the index for women.

The composite payroll index reached a new high of 205.7 in 1959, 6 p.c. above the 1958 figure and 5.6 p.c. higher than that for 1957. Average weekly wages and salaries continued to rise, the 1959 figure reaching \$73.47 as compared with \$70.43 in 1958 and \$67.93 in 1957. The movement of per capita earnings was steadily upward throughout the period for which these statistics are available (1939-59), the average increasing from \$23.44 in the earlier year to \$73.47 in the later. In the same period, the consumer price index (1949=100) rose from 63.2 to 126.5 and income tax rates increased substantially.

Subsection 2.—Employment and Weekly Wages and Salaries, 1959

The monthly industrial composite index of employment tended to increase gradually through the early part of 1959. However, the seasonally adjusted index declined in July and August, mainly owing to employment reductions in British Columbia, largely resulting

from industrial disputes in the province. Following termination of these disputes, the September adjusted index reached a level of 121.0, the highest recorded in the year. In the last quarter, the figures were slightly lower than in September, but averaged higher than those recorded for either of the first two quarters of 1959.

Employment by Industry.—Forestry employment tended to be higher in the 1959-60 winter season than in 1958-59 or 1957-58, but remained considerably below levels of most earlier winters in the postwar period. Mining employment (seasonally adjusted) was fairly steady through 1959, except for declines in February and March, reflecting temporary layoffs of coal miners in Nova Scotia. For most of the year, seasonally adjusted indexes for the industry remained close to 124 points, the level reached in the third quarter of 1958, following declines from the 1957 highs. The stability of the over-all mining figure hides fluctuations in some of the component industries. Thus employment in coal mining in 1959 was quiet, falling by 13.8 p.c. from 1958; employment in oil and natural gas showed a minor decline but moderate improvement was recorded in metal mining and in the non-metal group.

In manufacturing, employment in durable goods tended to advance through the early part of 1959 despite major layoffs in the aircraft industries. Industrial disputes in British Columbia brought down the figures for July and August. Steel shortages resulting from strikes in the United States led to layoffs which affected the November figures. In non-durables, a gradual upward movement through the first part of the year was reversed in the last half; weakness in the clothing and leather goods industries contributed to this decline.

Construction employment in most months of 1959 was higher than in the corresponding months of 1958. However, the seasonally adjusted index for the building and general engineering component of the industry began to decline during the autumn after rising through the early months of 1959.

Employment trends in the service-producing industries continued generally upwards through 1959, except in transportation, storage and communication. There were gains in service, in finance, insurance and real estate, in trade and in public utility operations, although trends in the latter two industries appeared to have levelled by the end of the year. Employment in several industries in the transportation, storage and communication division tended to decline in 1959. These industries included steam railways, water transportation and special communication projects.

6.—Annual Average Index Numbers of Employment by Industrial Group 1950-59, and Monthly Indexes 1958 and 1959

NOTE.—These indexes are calculated as at the last day of each month, on the base 1949=100.

Year	Forestry (chiefly log- ging)	Mining	Manu- factur- ing	Con- struc- tion	Trans- porta- tion, Storage and Com- muni- cation	Public Utility Opera- tion	Trade	Finance, Insur- ance and Real Estate	Serv- ice ¹	Indus- trial Com- posite
Averages —										
1950.....	104.8	106.0	101.4	103.1	100.2	101.2	103.6	105.9	101.0	102.1
1951.....	140.3	111.0	108.1	110.7	106.8	103.7	107.4	116.2	103.3	109.1
1952.....	119.5	116.9	109.9	123.1	110.9	108.0	110.4	122.1	107.0	111.9
1953.....	98.3	110.8	113.0	118.1	111.2	112.4	113.1	122.4	108.8	113.1
1954.....	96.3	110.4	107.3	110.6	109.0	116.1	114.8	128.0	111.7	109.9
1955.....	102.9	113.7	109.8	115.0	110.8	119.2	118.7	132.1	115.0	112.9
1956.....	113.2	122.7	115.8	131.8	118.3	126.3	126.3	137.1	125.1	120.7
1957.....	99.3	127.2	115.8	135.7	120.4	133.6	131.8	145.0	131.9	122.6
1958.....	75.9	123.5	109.8	126.2	115.5	137.6	131.6	149.3	135.1	117.9
1959.....	78.9	123.4	111.1	130.3	114.3	138.7	135.3	153.2	139.3	119.7

For footnote; see end of table, p. 764.

**6.—Annual Average Index Numbers of Employment by Industrial Group 1950-59,
and Monthly Indexes 1958 and 1959—concluded**

Year and Month	Forestry (chiefly log- ging)	Mining	Manu- factur- ing	Con- struc- tion	Trans- porta- tion, Storage and Comm- unica- tion	Public Utility Oper- ation	Trade	Finance, Insur- ance and Real Estate	Serv- ice ¹	Indus- trial Com- posite
1958—										
January.....	76.3	126.2	107.9	105.9	111.0	132.3	127.7	147.5	128.3	113.7
February.....	71.4	126.8	108.2	101.7	110.7	131.8	126.5	147.0	128.5	113.0
March.....	54.8	125.5	108.3	102.4	110.5	132.9	128.4	147.6	129.5	112.9
April.....	42.1	121.9	108.8	115.9	114.0	136.3	129.0	148.3	130.6	114.6
May.....	65.5	126.2	110.4	133.3	117.5	139.3	130.4	148.1	136.4	118.7
June.....	83.1	126.8	112.0	140.1	119.2	141.4	131.5	148.6	141.3	121.3
July.....	81.3	127.2	111.8	147.6	120.6	143.5	130.2	149.3	142.7	122.0
August.....	76.4	127.1	111.5	148.8	120.4	142.9	129.8	150.5	144.0	121.8
September.....	84.9	125.1	112.4	144.2	118.3	140.5	133.0	150.9	139.1	121.9
October.....	92.1	118.2	110.1	137.5	116.9	138.5	134.3	151.4	135.6	120.1
November.....	93.3	115.7	109.6	129.5	114.5	137.0	138.3	151.5	133.8	119.2
December.....	89.5	115.4	108.8	108.0	112.5	134.7	140.7	151.4	131.8	115.8
1959—										
January.....	77.5	122.4	107.5	105.0	109.3	132.0	129.6	151.3	131.6	113.7
February.....	70.1	118.8	107.5	104.0	108.5	132.5	129.0	150.8	131.7	113.0
March.....	52.9	118.4	108.4	107.1	109.7	133.1	131.1	151.0	132.6	113.7
April.....	42.6	120.6	109.5	120.1	112.3	135.8	131.5	151.5	134.5	115.7
May.....	61.9	123.3	111.7	133.0	116.0	139.8	133.5	151.8	138.7	119.6
June.....	87.2	126.4	114.2	144.0	118.3	142.7	134.7	152.4	144.8	123.5
July.....	78.1	127.8	112.2	150.7	119.7	145.0	133.8	152.8	147.2	123.1
August.....	76.0	127.0	113.5	154.4	119.2	145.6	135.2	155.7	147.5	124.2
September.....	97.2	125.8	115.3	151.7	118.0	142.4	138.7	155.5	144.6	125.6
October.....	102.6	124.9	113.9	146.5	116.1	140.4	140.0	155.4	141.5	124.4
November.....	102.7	123.7	110.6	133.5	114.6	138.4	143.1	155.3	139.7	121.8
December.....	97.5	121.8	108.4	113.3	110.1	136.7	143.4	155.0	137.3	118.1
Percentage distribution, 1959 ²	2.0	4.0	42.3	9.7	13.1	2.2	16.5	5.3	4.9	100.0

¹ Consists mainly of hotels, restaurants, laundries, dry-cleaning establishments and business and recreational services.

² The proportion of employees reported in the industries to the total reported by all employers making returns in Canada (12-month average).

**7.—Annual Average Index Numbers of Employment, by Industrial Division and Group,
1939 and 1955-59**

NOTE.—These indexes are calculated as at the last day of each month, on the base 1949=100.

Industry	1939	1955	1956	1957	1958	1959
Forestry (chiefly logging).....	59.3	102.9	113.2	99.3	75.9	78.9
Mining.....	93.7	113.7	125.7	127.2	123.5	123.4
Metal mining.....	100.8	117.2	126.8	136.3	135.7	140.8
Gold.....	132.5	80.7	76.5	77.0	75.0	73.6
Other metal.....	66.9	151.3	173.5	191.7	192.4	203.5
Iron.....	..	..	..	221.6	221.5	236.8
Fuels.....	90.8	102.8	110.4	109.8	102.9	93.9
Coal.....	103.3	69.8	67.3	61.4	56.4	48.6
Oil and natural gas.....	42.5	211.5	258.8	287.0	282.8	278.8
Non-metal.....	72.6	131.6	141.9	138.7	129.6	131.9
Asbestos.....	..	..	..	..	..	166.1
Manufacturing.....	56.3	109.8	115.8	115.8	109.8	111.1
Durable goods.....	46.5	117.4	126.4	125.3	114.8	115.5
Non-durable goods.....	62.3	103.2	106.6	107.6	105.6	107.3
Foods and beverages.....	63.3	106.9	109.6	111.4	112.3	114.6
Meat products.....	60.8	118.2	123.8	124.7	130.0	139.3
Dairy products.....	61.3	107.0	109.2	114.3	121.9	125.4

7.—Annual Average Index Numbers of Employment, by Industrial Division and Group, 1939 and 1955-59—continued

Industry	1939	1955	1956	1957	1958	1959
Manufacturing—concluded						
Foods and beverages—concluded						
Canned and cured fish.....	72.3	114.1	114.4	112.6	113.9	113.1
Canned and preserved fruits and vegetables..	65.6	108.6	110.5	116.7	109.8	110.3
Grain mill products.....	62.0	105.0	103.1	103.6	104.3	103.8
Bread and other bakery products.....	68.8	107.3	108.8	109.2	109.4	109.9
Biscuits and crackers.....	..	93.9	94.1	93.6	92.2	91.2
Distilled and malt liquors.....	48.7	105.5	108.9	108.8	105.8	106.0
Other beverages.....	56.0	113.2	120.8	125.7	130.3	137.8
Confectionery.....	..	83.0	87.6	90.8	89.2	88.7
Tobacco and tobacco products.....	87.4	86.6	89.0	91.2	99.1	96.2
Rubber products.....	69.3	109.6	114.3	110.4	99.5	106.2
Leather products.....	81.0	86.8	89.5	88.6	86.0	88.2
Boots and shoes (except rubber).....	81.4	89.6	92.5	92.9	91.4	94.8
Other leather products.....	80.5	81.8	84.0	80.8	76.2	76.3
Textile products (except clothing).....	67.9	85.4	86.8	84.4	77.5	78.8
Cotton yarn and broad woven goods.....	86.4	86.4	88.2	83.7	75.6	72.4
Woolen goods.....	66.8	71.7	74.4	70.2	58.8	60.6
Synthetic textiles and silk.....	49.0	87.5	85.5	85.3	79.8	82.7
Clothing (textile and fur).....	71.3	91.9	94.0	94.2	90.7	92.4
Men's clothing.....	69.3	96.4	100.8	100.2	93.1	93.0
Women's clothing.....	65.0	92.3	92.6	94.6	95.8	97.2
Knit goods.....	82.5	80.5	81.6	81.0	76.3	78.4
Fur goods.....	63.2	74.7	69.5	69.6	67.8	70.0
Wood products.....	60.7	107.3	110.3	105.5	102.6	103.5
Saw and planing mills.....	59.5	111.0	112.4	105.0	103.5	103.6
Furniture.....	61.3	106.0	111.8	112.5	109.2	112.6
Other wood products.....	64.6	93.0	98.6	94.6	85.7	85.6
Paper products.....	58.8	118.2	123.7	123.5	121.1	123.2
Pulp and paper mills.....	62.5	121.5	126.3	124.4	120.9	124.2
Other paper products.....	50.2	110.2	117.4	121.1	121.4	121.0
Printing, publishing and allied industries.....	66.1	111.8	115.3	119.6	119.1	121.3
Iron and steel products.....	45.6	102.9	112.4	113.4	102.6	109.7
Agricultural implements.....	28.7	66.6	58.9	59.9	63.8	78.2
Boilers and plate work.....	48.1	111.3	115.5	126.9	115.8	117.4
Fabricated and structural steel.....	39.1	127.7	153.7	174.6	159.2	163.0
Hardware and tools.....	50.5	102.6	107.3	97.8	91.5	99.5
Heating and cooking appliances.....	54.0	98.1	106.0	101.6	99.1	106.1
Iron castings.....	42.6	96.0	107.4	105.3	95.6	99.8
Machinery manufactures.....	41.6	108.7	122.4	124.7	107.1	107.1
Industrial machinery.....	..	..	..	134.6	113.2	116.6
Primary iron and steel.....	54.1	108.9	123.3	124.2	103.8	119.8
Sheet metal products.....	49.6	107.0	113.5	109.8	102.1	110.3
Wire and wire products.....	68.8	102.2	116.9	117.6	111.2	118.3
Transportation equipment.....	45.9	131.2	141.6	142.1	123.8	112.3
Aircraft and parts.....	31.6	328.9	352.0	391.2	366.0	263.6
Motor vehicles.....	45.6	121.8	134.4	124.9	102.0	106.0
Motor vehicle parts and accessories.....	45.6	111.9	120.1	112.9	100.4	107.1
Railroad and rolling-stock equipment.....	56.9	84.0	93.4	91.5	75.2	68.5
Shipbuilding and repairing.....	28.9	138.6	149.1	154.9	136.9	128.3
Non-ferrous metal products.....	48.6	125.3	132.5	128.3	122.3	126.3
Aluminum products.....	23.3	127.7	138.5	136.9	129.3	139.4
Brass and copper products.....	48.9	108.5	112.2	107.5	103.5	110.4
Smelting and refining.....	59.8	148.3	156.6	151.1	142.2	141.6
Electrical apparatus and supplies.....	37.4	137.4	152.2	150.4	135.7	135.8
Heavy electrical machinery.....	..	..	..	139.8	121.6	111.8
Telecommunication equipment.....	..	..	..	225.2	211.7	210.5
Non-metallic mineral products.....	46.2	123.6	134.0	132.2	133.2	143.1
Clay products.....	48.2	107.3	112.5	102.3	102.1	101.8
Glass and glass products.....	46.3	127.1	135.0	132.1	135.5	149.3
Products of petroleum and coal.....	65.6	125.6	133.5	140.0	139.7	138.5
Petroleum refining.....	..	..	..	..	141.8	140.7
Chemical products.....	47.6	122.2	127.7	133.5	131.2	129.4
Medicinal and pharmaceutical preparations..	47.0	110.5	115.8	117.1	119.0	119.2
Acids, alkalis and salts.....	50.7	126.0	132.9	146.9	148.1	145.5
Other chemical products.....	..	124.3	129.7	134.5	130.7	128.4
Miscellaneous manufacturing industries.....	50.2	102.8	108.8	113.7	119.9	126.5
Construction	62.0	115.0	131.8	135.7	126.2	130.3
Building and general engineering.....	29.3	117.8	140.2	144.4	127.6	129.0
Building.....	..	120.2	146.5	147.7	130.1	136.5
General engineering.....	..	107.3	117.8	130.8	117.1	98.0
Highways, bridges and streets.....	110.5	110.5	118.4	122.0	124.2	132.3

7.—Annual Average Index Numbers of Employment, by Industrial Division and Group, 1939 and 1955-59—concluded

Industry	1939	1955	1956	1957	1958	1959
Transportation, Storage and Communication	59.8	110.8	118.3	120.4	115.5	114.3
Transportation.....	62.4	105.9	111.9	111.8	105.0	104.5
Air transport and airports.....	18.5	170.5	184.8	190.7	187.3	192.9
Steam railways.....	65.9	103.4	109.0	107.7	97.7	95.6
Maintenance of equipment.....	55.1	107.3	111.2	108.9	92.6	87.0
Maintenance of ways and structures.....	69.9	91.7	101.6	102.2	93.5	93.9
Transportation—steam railways.....	66.5	106.2	110.7	108.5	98.5	96.0
Telegraphs.....	65.4	118.0	119.8	126.8	122.3	121.9
Water transportation.....	63.2	95.9	101.7	100.1	96.9	94.6
Electric and motor transportation.....	..	112.8	119.0	123.5	124.1	129.3
Urban and interurban transportation.....	56.3	89.0	87.5	86.5	84.4	82.3
Truck transportation.....	54.1	156.8	175.2	189.1	191.5	211.6
Storage.....	73.9	107.8	116.2	115.8	115.3	114.4
Grain elevators.....	79.2	104.5	107.8	104.2	104.9	103.2
Storage and warehouses.....	55.2	118.0	141.4	150.5	145.9	147.0
Communication.....	41.2	137.8	152.6	167.4	171.0	166.5
Radio broadcasting.....	..	215.7	265.7	294.2	307.1	319.6
Telephone.....	41.3	131.4	143.0	155.7	154.2	148.3
Public Utility Operation	54.9	119.2	126.3	133.6	137.6	138.7
Electric light and power.....	53.1	121.8	127.9	133.9	136.2	135.5
Other public utilities.....	70.0	105.6	118.2	132.6	143.8	152.0
Trade	61.5	118.7	126.3	131.8	131.6	135.3
Wholesale.....	60.2	120.7	128.0	133.2	131.8	134.8
Retail.....	62.3	117.7	125.4	131.0	131.6	135.6
Food.....	..	140.0	151.4	164.9	171.9	178.9
Department stores.....	..	105.6	112.4	114.6	113.9	117.4
Variety stores.....	..	111.4	119.1	126.9	125.9	129.2
Automotive products.....	..	146.2	156.3	166.0	160.8	164.9
Finance, Insurance and Real Estate	67.8	132.1	137.1	145.0	149.3	153.2
Banking, investment and loan.....	62.9	136.6	140.5	148.4	150.1	153.6
Insurance.....	75.7	123.8	129.3	137.1	145.1	149.7
Service	56.8	115.0	125.1	131.9	135.1	139.3
Hotels and restaurants.....	55.4	110.2	120.2	125.5	125.6	128.6
Laundries and dry-cleaning plants.....	63.1	105.0	110.0	114.0	115.0	113.3
Other service.....	..	146.4	161.8	175.4	187.9	245.9
Industrial Composite	60.1	112.9	120.7	122.6	117.9	119.7

8.—Annual Average Index Numbers of Employment by Province 1950-59, and Monthly Indexes 1958 and 1959

NOTE.—These indexes are calculated as at the last day of each month, on the base 1949=100.

Year and Month	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Canada
Averages—											
1950.....	..	110.3	95.6	102.6	100.5	102.7	100.8	100.8	104.5	100.8	102.1
1951.....	111.7	112.6	100.3	109.0	109.2	110.4	103.9	106.0	112.4	106.1	109.1
1952.....	130.2	123.2	104.0	109.5	113.4	112.0	106.0	111.4	120.8	106.7	111.9
1953.....	140.4	115.5	101.0	100.8	112.4	114.5	107.0	116.2	128.5	108.2	113.1
1954.....	128.0	109.9	97.6	98.0	109.2	110.6	104.7	118.0	128.0	106.3	109.9
1955.....	131.1	114.2	97.1	103.5	112.5	113.5	105.2	117.0	133.0	111.9	112.9
1956.....	136.9	117.4	101.7	110.1	120.1	121.4	108.6	121.1	148.5	121.5	120.7
1957.....	130.1	115.2	100.2	103.8	121.5	124.3	110.9	125.3	152.2	123.9	122.6
1958.....	122.6	114.9	95.5	98.0	117.0	119.8	108.7	126.6	150.5	114.7	117.9
1959.....	125.8	126.3	96.3	101.7	118.5	121.3	112.2	130.0	155.0	115.1	112.9
1958—											
January.....	108.4	94.2	92.3	93.8	113.2	117.0	103.9	114.4	142.2	106.9	113.7
February.....	109.3	100.2	90.8	94.8	112.3	116.3	102.7	113.1	140.2	108.9	113.0
March.....	111.2	97.7	89.0	93.1	111.2	116.7	103.3	114.3	140.1	109.4	112.9
April.....	111.3	102.7	91.3	87.9	112.8	118.5	105.4	119.5	141.1	111.2	114.6
May.....	123.8	112.9	96.3	96.7	117.3	120.7	109.0	129.5	150.6	116.6	118.7
June.....	133.4	117.8	97.0	100.2	120.4	122.5	112.0	133.8	155.5	118.0	121.3
July.....	139.3	123.1	100.3	102.1	120.7	122.2	113.8	135.9	160.3	119.7	122.0
August.....	138.1	128.3	98.3	103.1	121.1	121.3	113.2	137.2	161.9	120.5	121.8
September.....	132.3	124.6	99.7	102.7	120.8	122.2	112.7	135.9	159.5	118.4	121.9
October.....	130.1	129.4	100.0	100.3	120.7	119.3	111.8	132.8	154.9	118.4	120.1
November.....	121.1	134.4	96.5	101.3	119.7	120.0	109.3	130.1	151.1	115.3	119.2
December.....	112.5	115.6	94.6	100.5	114.4	118.0	107.9	123.1	148.4	110.9	115.8

8.—Annual Average Index Numbers of Employment by Province 1950-59, and Monthly Indexes 1958 and 1959—concluded

Year and Month	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Canada
1959—											
January.....	111.6	101.8	93.9	98.3	111.8	116.6	105.9	118.5	144.1	108.0	113.7
February.....	104.5	101.2	87.1	97.5	111.2	116.0	105.1	118.3	145.0	109.5	113.0
March.....	106.4	104.4	87.9	96.3	110.9	116.9	105.9	119.5	145.9	112.2	113.7
April.....	107.2	108.7	94.0	91.2	113.7	118.5	107.6	124.0	146.2	114.5	115.7
May.....	117.5	127.4	96.0	98.0	117.6	121.4	111.8	133.2	154.7	117.9	119.6
June.....	136.3	137.4	97.9	104.7	121.7	124.3	115.8	138.4	161.6	121.8	123.5
July.....	143.9	146.5	101.5	106.8	122.7	123.8	117.9	141.4	164.5	110.2	123.1
August.....	143.6	150.8	101.0	106.4	124.0	124.7	118.0	140.0	166.7	112.6	124.2
September.....	144.8	145.5	99.9	106.2	124.9	125.6	116.4	137.9	165.0	122.9	125.6
October.....	141.5	139.1	100.2	104.3	124.1	125.0	113.2	135.2	160.3	120.3	124.4
November.....	133.7	132.7	99.7	104.8	122.4	122.3	113.2	129.4	155.1	117.3	121.8
December.....	118.8	120.2	97.0	105.6	116.5	120.0	109.6	123.9	151.2	113.9	118.1
Percentage distribution, 1959 ¹	1.4	0.2	3.1	2.3	28.4	42.5	5.0	2.5	5.8	8.8	100.0

¹ The proportion of employees reported in the provinces to the total reported by all employers making returns in Canada (12-month average).

9.—Annual Average Index Numbers of Employment by Metropolitan Area 1950-59, and Monthly Indexes 1958 and 1959

NOTE.—These indexes are calculated as at the last day of each month, on the base 1949=100.

Year and Month	Montreal	Quebec	Toronto	Ottawa-Hull	Hamilton	Windsor	Winnipeg	Vancouver ¹
Averages—								
1950.....	101.3	98.7	104.1	103.1	100.8	102.2	100.1	99.0
1951.....	106.6	101.6	110.7	108.4	109.5	107.7	102.7	101.4
1952.....	110.9	105.2	113.3	108.9	109.2	107.0	104.0	100.1
1953.....	113.7	110.8	119.8	109.2	111.1	110.9	103.9	102.1
1954.....	110.7	110.5	120.1	109.9	103.6	91.5	103.4	102.6
1955.....	113.4	108.0	121.6	114.0	106.4	103.4	104.6	107.9
1956.....	120.2	111.0	128.3	119.6	113.8	104.9	106.8	117.4
1957.....	124.6	110.8	132.1	120.3	114.4	95.9	107.7	120.4
1958.....	121.5	108.1	131.0	121.2	105.0	78.6	107.5	114.8
1959.....	123.3	110.4	131.3	124.9	112.0	79.3	111.3	116.0
1958—								
January.....	118.9	103.5	128.7	114.4	107.5	74.2	103.1	111.7
February.....	118.4	103.2	128.0	113.8	105.6	80.9	101.9	110.5
March.....	119.0	104.5	128.7	115.6	106.1	81.2	102.5	110.9
April.....	120.9	107.2	129.9	117.6	108.8	80.3	105.0	112.8
May.....	122.2	111.7	131.0	120.7	108.0	80.7	107.0	115.4
June.....	123.1	112.4	131.8	123.0	109.1	82.1	108.6	116.2
July.....	122.6	112.4	131.6	123.2	108.8	78.0	109.7	116.9
August.....	123.2	109.2	132.4	124.8	98.6	67.2	110.0	118.3
September.....	123.7	107.7	132.5	125.9	97.1	80.6	110.8	117.6
October.....	123.6	110.9	132.0	125.4	96.6	78.2	110.7	117.3
November.....	123.3	110.4	133.6	125.9	107.1	81.3	110.4	116.7
December.....	119.5	104.3	131.8	123.7	106.6	79.1	109.8	113.9
1959—								
January.....	118.2	103.3	129.1	118.8	105.8	72.6	106.1	112.5
February.....	118.2	103.9	128.4	118.6	105.2	78.4	105.7	112.9
March.....	119.2	106.7	127.7	118.8	107.3	79.1	106.8	114.3
April.....	122.6	109.1	129.1	121.0	110.5	80.7	108.2	116.2
May.....	123.9	110.8	131.0	125.2	112.7	82.1	110.5	118.1
June.....	124.9	112.9	133.0	127.0	114.6	84.6	113.1	120.1
July.....	124.2	114.3	132.2	126.7	114.5	78.9	113.9	110.2
August.....	125.7	115.5	133.0	128.3	114.5	74.5	115.2	112.8
September.....	127.0	115.1	134.3	130.2	116.4	80.9	115.9	121.2
October.....	127.5	113.6	135.0	129.8	116.3	82.0	115.6	119.3
November.....	126.9	111.9	134.4	127.9	113.8	78.1	113.7	118.2
December.....	121.9	107.9	130.7	126.1	111.2	79.2	111.1	116.8
Percentage distribution, 1959 ²	15.5	1.5	15.4	1.9	3.0	1.3	3.3	4.6

¹ Includes New Westminster from 1956. ² The proportion of employees reported in metropolitan areas to the total reported by all employers making returns in Canada (12-month average).

Average Weekly Wages and Salaries.—Average weekly wages and salaries rose by 4.3 p.c. from 1958 to 1959. The increase was larger than those taking place in periods when employment was relatively quiet, but exceeded the year-to-year rises recorded in other years since 1947. The largest percentage increase was recorded for transportation, storage and communication (6.6 p.c.) in which group higher wage rates for railway employees were a major factor in the change. Increases in all other divisions except forestry and construction were very close to the 4.3 p.c. recorded in the general average. In construction, the rise was 2.7 p.c. Average weekly wages and salaries in forestry, where many wage-earners are paid on a piece-work basis, declined fractionally from 1958 to 1959. This was the first instance of a year-to-year reduction in average weekly earnings in any industry division noted in the postwar period. Industrial disputes in British Columbia, which affected the figures for July and August, contributed to the lower average for the industry in 1959, earnings in that province being above the Canada level.

10.—Annual Index Numbers of Employment and Payrolls, together with Average Weekly Wages and Salaries, by Industry, Province and Urban Area, 1957-59

Industry, Province and Urban Area	Employment (1949=100)			Payrolls (1949=100)			Average Weekly Wages and Salaries		
	1957	1958	1959	1957	1958	1959	1957	1958	1959
Industry							\$	\$	\$
Forestry (chiefly logging).....	99.3	75.9	78.9	172.0	136.0	141.3	69.38	71.74	71.63
Mining.....	127.2	123.5	123.4	207.7	207.9	217.6	83.89	86.60	90.76
Manufacturing.....	115.8	109.8	111.1	185.3	182.7	193.3	69.94	72.67	75.84
Durable goods ¹	125.3	114.8	115.5	199.8	190.6	201.1	74.81	77.93	81.67
Non-durable goods ¹	107.6	105.6	107.3	171.1	175.0	185.6	65.08	67.77	70.52
Construction.....	135.7	126.2	130.3	241.8	227.4	241.1	73.63	74.64	76.55
Transportation, storage, communication.....	120.4	115.5	114.3	178.7	179.9	189.4	71.20	74.72	79.65
Public utility operation.....	133.6	137.6	138.7	221.9	242.8	257.6	78.99	83.85	88.08
Trade.....	131.8	131.6	135.3	203.3	211.6	227.1	57.51	60.20	63.12
Finance, insurance and real estate.....	145.0	149.3	153.2	216.8	233.0	247.4	63.36	66.40	68.82
Service ²	131.9	135.1	139.3	205.9	221.0	236.1	45.77	48.23	50.27
Industrial Composite	122.6	117.9	119.7	194.7	194.1	205.7	67.93	70.43	73.47
Province									
Newfoundland.....	130.1	122.6	125.8	215.2	202.4	212.2	61.99	62.36	63.68
Prince Edward Island.....	115.2	114.9	126.3	173.6	175.1	209.5	50.68	51.15	54.75
Nova Scotia.....	100.2	95.5	96.3	150.8	148.6	154.6	56.36	58.33	60.17
New Brunswick.....	103.8	98.0	101.7	157.4	150.8	162.4	57.33	58.14	60.39
Quebec.....	121.5	117.0	118.5	192.8	192.7	203.6	65.18	67.69	70.56
Ontario.....	124.3	119.6	121.3	198.2	197.8	209.3	70.56	73.20	76.39
Manitoba.....	110.9	108.7	112.2	166.5	171.7	186.1	63.73	66.85	70.16
Saskatchewan.....	125.3	126.6	130.0	197.4	206.9	218.6	65.26	68.14	70.13
Alberta (including Northwest Territories).....	152.2	150.5	155.0	238.5	246.4	263.9	69.62	72.88	75.63
British Columbia (including Yukon).....	123.9	114.7	115.1	200.6	190.7	202.1	73.80	75.88	80.09
Urban Area									
St. John's, Nfld.....	124.1	126.0	135.5	192.1	199.3	221.8	49.82	50.98	52.78
Sydney, N.S.....	93.3	90.8	87.2	133.9	140.3	135.6	70.16	72.62	73.03
Halifax, N.S.....	117.8	114.4	117.0	181.3	182.6	194.7	54.80	57.19	59.73
Moncton, N.B.....	97.9	97.9	99.8	148.9	148.9	158.4	55.55	55.55	57.55
Saint John, N.B.....	99.4	95.6	101.5	144.8	143.5	160.9	52.26	54.00	56.87
Chicoutimi-Jonquière, Que.....	110.8	108.1	110.1	175.6	178.6	192.2	56.22	58.64	61.62
Quebec, Que.....	106.9	98.4	100.3	165.5	155.2	163.4	55.71	57.13	59.08
Sherbrooke, Que.....	102.7	102.7	100.0	170.5	170.5	173.0	57.13	57.13	59.08
Shawinigan Falls, Que.....	118.3	118.2	116.5	181.4	176.9	192.2	62.97	64.07	67.66
Trois Rivières, Que.....	75.8	73.7	77.3	112.1	111.6	121.0	57.35	58.72	60.26
Drummondville, Que.....	124.6	121.5	123.3	197.1	199.9	212.3	66.11	68.87	72.02
Montreal, Que.....									

For footnotes, see end of table.

10.—Annual Index Numbers of Employment and Payrolls, together with Average Weekly Wages and Salaries, by Industry, Province and Urban Area, 1957-59—concluded

Urban Area	Employment (1949=100)			Payrolls (1949=100)			Average Weekly Wages and Salaries		
	1957	1958	1959	1957	1958	1959	1957	1958	1959
Urban Area—concluded							\$	\$	\$
Ottawa, Ont. - Hull, Que.	120.3	121.2	124.9	187.1	198.3	215.0	61.24	64.49	67.87
Kingston, Ont. ....	..	112.8	110.4	..	191.4	194.9	..	67.72	70.29
Peterborough, Ont.	106.9	99.1	101.2	177.0	172.7	187.0	74.01	77.74	82.21
Oshawa, Ont.	170.0	166.1	171.0	258.2	263.4	290.4	76.58	79.73	85.06
Toronto, Ont.	132.1	131.0	131.3	211.4	218.7	227.1	70.88	73.96	76.57
Hamilton, Ont.	114.4	105.0	112.0	183.4	172.6	197.1	74.44	76.41	81.75
St. Catharines, Ont.	124.3	109.6	111.3	196.6	177.3	189.8	77.76	79.12	83.31
Niagara Falls, Ont.	125.6	108.3	101.2	208.1	180.5	172.3	75.25	75.57	76.72
Brantford, Ont.	86.8	87.1	90.7	126.1	132.6	144.9	63.63	66.68	69.93
Guelph, Ont. ....	..	118.2	126.1	..	193.6	214.2	..	66.20	68.28
Galt, Ont.	114.9	110.6	112.9	178.0	178.0	191.7	60.56	62.84	66.22
Kitchener, Ont.	115.8	113.7	121.4	181.2	183.4	208.0	63.64	65.64	69.66
Sudbury, Ont.	143.3	116.2	138.1	226.6	175.8	228.3	83.97	79.46	87.20
Timmins, Ont. ....	..	..	94.1	..	..	132.1	..	..	66.32
London, Ont.	120.1	119.7	123.8	188.9	196.3	212.8	63.76	66.52	69.56
Sarnia, Ont.	139.2	129.9	119.5	246.9	245.1	253.3	85.72	91.15	93.99
Windsor, Ont.	95.9	78.6	79.3	140.1	120.4	131.3	73.58	77.04	83.30
Sault Ste. Marie, Ont.	137.2	139.6	146.8	230.7	241.1	269.1	85.29	87.42	92.78
Fort William-Port Arthur, Ont.	119.0	115.2	111.8	187.4	184.4	186.1	70.38	71.57	74.35
Winnipeg, Man.	107.7	107.5	111.3	164.7	172.7	188.6	60.58	63.71	67.07
Regina, Sask.	122.2	122.6	132.7	201.0	206.0	231.8	62.69	64.23	66.89
Saskatoon, Sask.	127.4	131.9	136.3	203.9	223.4	240.1	59.91	63.81	66.35
Edmonton, Alta.	180.2	178.9	186.6	289.1	298.8	324.0	65.36	68.19	70.84
Calgary, Alta.	159.2	158.8	169.5	248.2	256.0	284.7	65.56	68.11	70.90
Vancouver, B.C.	120.4	114.8	116.0	196.9	196.1	209.2	71.46	74.63	78.89
Victoria, B.C.	121.5	115.6	113.4	190.5	190.8	195.7	65.37	68.73	71.76

¹ The durable goods group includes wood products, iron and steel products, transportation equipment, non-ferrous metal products, electrical apparatus and supplies, and non-metallic mineral products; the non-durable goods group includes all other manufacturing industries. ² Mainly hotels, restaurants, laundries, dry-cleaning establishments and business and recreational services.

11.—Annual Average Weekly Wages and Salaries by Industrial Group 1950-59, and Monthly Averages 1958 and 1959

Year and Month	For- estry (chiefly log- ging)	Mining	Manu- factur- ing	Con- struc- tion	Trans- porta- tion, Storage and Com- muni- cation	Public Utility Oper- ation	Trade	Finance, Insur- ance and Real Estate	Serv- ice ¹	Indus- trial Com- posite
Averages—	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
1950.....	42.44	54.27	46.49	43.42	49.34	51.44	39.02	44.09	29.64	45.08
1951.....	49.13	60.33	51.68	48.79	54.14	56.48	43.08	46.48	31.81	50.04
1952.....	55.84	65.79	56.36	55.82	56.81	62.00	46.08	49.35	34.23	54.41
1953.....	58.26	68.91	59.29	60.88	61.24	65.45	48.51	51.86	37.12	57.53
1954.....	59.89	70.67	61.15	61.15	62.76	67.87	50.73	53.93	38.91	59.04
1955.....	60.62	73.53	63.48	62.11	64.56	70.80	52.42	56.79	40.71	61.05
1956.....	65.40	78.01	66.71	68.58	67.29	74.39	54.64	60.29	42.93	64.44
1957.....	69.38	83.89	69.94	73.63	71.20	78.99	57.51	63.36	45.77	67.93
1958.....	71.74	86.60	72.67	74.54	74.72	83.85	60.20	66.40	48.23	70.43
1959.....	71.63	90.76	75.84	76.55	79.65	88.08	63.12	68.82	50.27	73.47
1958—										
January.....	63.77	87.52	71.61	75.47	71.87	81.80	59.43	64.39	47.14	69.25
February.....	73.55	88.26	72.08	75.09	73.25	83.35	59.74	65.42	48.40	70.02
March.....	75.33	87.62	72.80	75.72	72.74	82.11	59.36	65.88	48.32	70.20
April.....	77.47	86.19	72.92	74.19	73.26	83.76	59.97	66.27	48.86	70.35
May.....	69.16	85.33	73.42	75.18	74.60	83.13	60.19	66.55	48.34	70.76
June.....	70.70	86.08	73.06	74.91	74.75	82.95	60.60	66.63	47.96	70.70
July.....	70.48	84.74	72.62	76.36	75.30	83.22	60.85	66.65	47.76	70.76
August.....	70.31	85.93	72.40	76.13	75.44	84.20	60.72	66.65	47.35	70.67
September.....	71.82	85.79	72.73	76.25	75.57	84.72	60.52	68.91	48.04	70.85
October.....	72.42	87.95	73.36	75.20	76.09	85.05	60.43	67.06	48.66	71.13
November.....	75.40	89.65	74.11	74.66	77.26	86.36	60.17	67.12	49.20	71.60
December.....	70.52	84.13	70.91	65.31	76.50	85.54	60.37	67.33	48.68	68.91

¹ Mainly hotels, restaurants, laundries, dry-cleaning establishments and business and recreational services.

11.—Annual Average Weekly Wages and Salaries by Industrial Group 1950-59, and Monthly Averages 1958 and 1959—concluded

Year and Month	For- estry (chiefly log- ging)	Mining	Manu- factur- ing	Con- struc- tion	Trans- porta- tion, Storage and Communi- cation	Public Utility Operation	Trade	Finance, Insur- ance and Real Estate	Serv- ice ¹	Indus- trial Com- posite
1959—	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
January.....	65.93	89.85	75.16	75.62	76.93	86.52	62.44	67.60	49.63	72.34
February.....	70.80	93.21	75.59	76.38	77.91	87.10	62.98	68.36	50.14	73.11
March.....	74.59	91.65	75.22	73.11	77.64	87.38	62.68	69.04	50.01	72.60
April.....	78.20	90.70	75.69	75.45	78.27	87.56	63.20	69.38	50.34	73.26
May.....	70.55	89.37	76.20	77.96	79.69	87.25	63.46	69.33	50.23	73.82
June.....	70.96	89.64	75.96	76.71	80.18	87.29	63.75	69.40	49.63	73.71
July.....	69.78	90.08	75.56	78.47	80.47	86.93	63.83	69.47	49.29	73.76
August.....	68.57	89.19	75.27	77.92	80.51	87.38	63.34	68.78	49.36	73.42
September.....	71.88	91.27	76.43	79.79	81.02	88.96	63.05	68.97	50.42	74.30
October.....	74.12	91.89	77.07	79.20	81.69	89.38	63.28	68.30	51.32	74.66
November.....	73.56	93.24	76.86	78.24	81.10	90.25	62.60	68.41	51.44	74.23
December.....	70.58	89.07	75.13	69.78	80.42	90.97	62.87	68.75	51.45	72.41

¹ Mainly hotels, restaurants, laundries, dry-cleaning establishments and business and recreational services.

Subsection 3.—Hours and Hourly Earnings, 1959

Since the end of 1944, the monthly survey of employment and payrolls has also obtained, for wage-earners, statistics of hours worked and paid for during periods of absence, with corresponding totals of gross wages paid to the wage-earners for whom records of hours are maintained. These are mainly hourly rated or production workers; the necessary information on hours is frequently not kept by employers for ancillary workers or, in many establishments, for any wage-earners. Salaried employees are excluded by definition from this series. In a number of industries, precise records of hours worked are lacking, with the result that data are available for fewer industries than are covered in the employment and average weekly wage and salary statistics.

The questionnaire used in the monthly survey calls for entry of the gross wage payments in the reported pay periods, before deduction for income tax and unemployment insurance deductions, etc. They include such items as payments for premium overtime work, shift differentials, production, incentive and cost-of-living bonuses where paid, as well as straight-time wages including the earnings of wage-earners employed for only part of the pay periods covered by the monthly surveys.

The general movement of average hourly earnings and weekly wages has been upward throughout the postwar years, while the work week has been shortened in most industries. In highway, bridge and street construction, however, average hours have risen since 1945, when labour and materials were in short supply. The changes from 1945 to 1959 are summarized in Table 12.

The percentage increases in earnings in manufacturing in the period have been notable, particularly in the non-durable goods component. Above-average expansion in recent years in employment in the relatively high-pay groups of that division, such as oil refining,

pulp and paper, and printing and publishing, and a levelling in several of the relatively low-pay industries, have been important factors in narrowing the percentage differences between earnings in plants producing durable goods and those manufacturing non-durable goods. Substantial advances in employment during the 14 years were also reported by several of the heavy industries, notably non-ferrous metal products and electrical apparatus and supplies, but the levels in these classes were closer to the divisional average so that the rise in their working forces had less effect on the group than the changes in industrial distribution taking place in the non-durable group as a whole.

12.—Changes in Average Hours and Earnings in Specified Industries, 1945 to 1959

Industry	Average Hours Worked			Average Hourly Earnings			Average Weekly Earnings		
	1945	1959	Change	1945	1959	Change	1945	1959	Change
	No.	No.	p.c.	\$	\$	p.c.	\$	\$	p.c.
Mining.....	43.9	41.5	- 5.5	0.85	2.04	+ 140	37.40	84.80	+ 127
Manufacturing.....	44.1	40.7	- 7.7	0.69	1.72	+ 149	30.47	70.16	+ 130
Durable goods.....	44.5	41.0	- 7.9	0.76	1.87	+ 146	34.04	76.66	+ 125
Non-durable goods.....	43.7	40.4	- 7.6	0.61	1.58	+ 159	26.57	63.90	+ 140
Construction—									
Building and structures.....	40.2	39.6	- 1.5	0.81	2.01	+ 148	32.60	70.59	+ 144
Highways, bridges and streets..	36.7	41.2	+12.3	0.63	1.56	+ 148	23.19	64.28	+ 177
Service.....	43.8	39.4	-10.0	0.43	1.00	+ 133	18.92	39.29	+ 108

In 1959, average hourly earnings in manufacturing generally rose 6 cents over 1958, or 3.6 p.c., to \$1.72. Although this gain was larger than that recorded in 1958 over 1957, it was smaller than in most of the postwar years. Per capita weekly wages also rose to a new high of \$70.16, increasing 5.1 p.c. over 1958. This was the greatest percentage advance since 1952 and was partly a result of a gain of 0.5 hours in the length of the average work week. At 40.7 hours, this was at its highest level since 1956.

In the durable goods component of manufacturing, average hourly earnings advanced by 3.9 p.c. in 1959 over 1958. With a rise of 0.7 hours in the length of the average work week, per capita weekly wages increased to a greater extent—by 5.9 p.c. Restoration of more usual conditions following settlement of major industrial disputes in iron and steel products and in smelting and refining, which had seriously affected the situation in 1958, contributed materially to the higher figures. Wage rates moved up in many industries. On the other hand, substantial lay-offs of relatively highly paid wage-earners in aircraft, railway rolling-stock and shipbuilding plants tended to offset the effect of these factors on the group averages.

Average hourly earnings in the light manufacturing industries showed a gain of 3.3 p.c. in 1959, bringing the figure to \$1.58. The average work week was 0.3 hours longer than in 1958 and weekly wages rose by 4.2 p.c. The gain in average hourly earnings was the smallest recorded in a year-to-year comparison since 1949, although that in weekly wages was larger than the 1958 increase over 1957, reflecting the longer work week. Wage-rate increases in meat products, breweries, rubber and textile products, pulp and paper mills, printing and publishing, petroleum refining and other industries contributed to higher average earnings in 1959. A higher level of employment in the rubber group, in

which earnings exceeded the divisional average, was also a factor. On the other hand, increased activity in industries employing high proportions of women, such as the textile, clothing and leather groups, with declines in the relatively highly paid petroleum refining and chemical industries, tended to limit the amount of the increase in the non-durable goods group as a whole.

In mining, average hourly and weekly earnings of the reported wage-earners were 4 p.c. higher in 1959 than 1958, while the work week was unchanged. Settlement of industrial disputes in base metal mines as well as wage-rate adjustments contributed to the increases. There was a moderate rise in average hourly earnings in construction, with a smaller gain of 2.5 p.c. in the weekly figure, average hours having fallen from the 1958 figure. Higher wage rates in electric and motor transportation accounted for much of the increase in earnings recorded in electric and motor transportation in 1959.

13.—Average Hours and Earnings in Specified Industries and Areas, 1957-59

Industry, Province and Metropolitan Area	Average Hours Worked			Average Hourly Earnings			Average Weekly Earnings		
	1957 ^a	1958	1959	1957 ^a	1958	1959	1957 ^a	1958	1959
Industry	No.	No.	No.	\$	\$	\$	\$	\$	\$
Mining	42.3	41.5	41.5	1.88	1.96	2.04	79.35	81.30	84.80
Metal mining.....	42.9	41.8	41.7	1.95	2.03	2.13	83.70	84.77	88.73
Coal mining.....	39.3	39.0	38.6	1.62	1.73	1.74	63.51	67.43	67.00
Manufacturing	40.4	40.2	40.7	1.61	1.66	1.72	64.96	66.77	70.16
Durable goods ¹	40.5	40.3	41.0	1.73	1.80	1.87	70.15	72.42	76.66
Non-durable goods ¹	40.2	40.1	40.4	1.47	1.53	1.58	59.17	61.31	63.90
Construction	41.2	40.7	40.2	1.76	1.78	1.84	72.55	72.36	74.20
Buildings and structures.....	41.3	40.5	39.6	1.90	1.94	2.01	78.47	78.37	79.59
Highways, bridges and streets.....	40.8	41.0	41.2	1.44	1.48	1.56	58.83	60.80	64.28
Service	39.8	39.5	39.4	0.94	0.97	1.00	37.37	38.28	39.29
Hotels and restaurants.....	40.0	39.6	39.4	0.93	0.95	0.98	37.24	37.58	38.52
Laundries and dry-cleaning plants.....	39.9	39.6	40.1	0.90	0.96	0.97	36.07	37.94	38.98
Province									
Newfoundland.....	42.7	39.2	39.7	1.57	1.54	1.59	67.17	60.37	63.00
Nova Scotia.....	40.9	40.4	40.9	1.44	1.48	1.62	58.98	59.87	62.40
New Brunswick.....	41.2	41.4	41.6	1.42	1.45	1.50	58.46	59.99	62.33
Quebec.....	41.4	41.0	41.5	1.44	1.50	1.54	59.78	61.38	63.97
Ontario.....	40.1	40.0	40.6	1.69	1.74	1.82	67.87	69.70	73.79
Manitoba.....	40.0	40.1	40.4	1.50	1.56	1.65	59.96	62.66	66.52
Saskatchewan.....	39.8	39.3	39.6	1.68	1.78	1.86	66.82	70.15	73.68
Alberta.....	40.0	40.0	39.9	1.68	1.75	1.83	67.16	70.16	72.90
British Columbia.....	37.7	37.6	37.9	1.91	2.02	2.09	72.10	75.95	79.39
Metropolitan Area									
Montreal.....	40.6	40.3	40.7	1.50	1.55	1.60	61.06	62.42	65.06
Toronto.....	40.0	40.1	40.5	1.66	1.72	1.75	66.28	68.89	70.74
Hamilton.....	40.0	39.7	40.6	1.89	1.93	2.06	75.70	76.50	83.66
Windsor.....	37.2	38.2	39.8	1.89	1.94	2.09	70.27	73.99	83.15
Winnipeg.....	39.8	40.1	40.5	1.48	1.54	1.63	58.82	61.91	65.93
Vancouver.....	37.5	37.4	37.9	1.88	1.97	2.04	70.59	73.72	77.36

¹ The durable goods group includes wood products, iron and steel products, transportation equipment, non-ferrous metal products, electrical apparatus and supplies, and non-metallic mineral products; the non-durable goods group includes all other manufacturing industries.

Subsection 4.—Hours and Earnings in Manufacturing Industries*

Information obtained in an annual survey of earnings and hours in manufacturing relating to the last week of October supplements the monthly data included in the preceding Subsections. Separate figures of hours and earnings of men and women wage-earners and salaried employees are obtained each year, while for some time additional data have been obtained in a triennial rotation. Distributions of wage-earners in a given range of hours were collected each year from 1946 to 1949 and every third year thereafter to 1958, for which statistics are given in Table 18. In 1950, 1953, 1956 and 1959, percentage distributions of wage-earners and salaried employees by amounts earned in the survey week were obtained (1956 data are given in the 1959 Year Book, p. 743; those for 1959 were not available at time of printing); and in 1951, 1954 and 1957, hours and earnings of office workers were segregated from those for managerial, supervisory, professional and other senior salaried employees (1957 data are given in the 1959 Year Book, p. 742).

The annual survey, like the monthly survey, is limited to establishments usually employing 15 or more persons and covers approximately 90 p.c. of all employees reported to the annual Census of Manufactures. Establishments are asked to report for all casual, part-time and full-time employees on their staffs in the survey week, excluding proprietors, firm members, pensioners, homeworkers, employees absent without pay throughout the week, and staffs in manufacturers' separately organized sales offices. Gross earnings for the week are required, including regularly paid bonuses, overtime pay and amounts paid for absences in the survey week. The reported hours comprise part-time, full-time and overtime hours worked and hours of paid absence. The general averages obtained are usually very similar to those derived from the corresponding monthly survey.

The annual survey reflects a continued upward movement in wages and salaries throughout the postwar period. Table 14 provides year-to-year comparisons of average earnings from 1949. In the decade, men's weekly wages rose by 58.5 p.c. and their salaries by 65.7 p.c. In the same period, women's weekly wages advanced by 54.2 p.c. and their salaries by 65.8 p.c. Because the general trend in working hours has been downward as a result of reductions in the standard work week and other factors, the increases in average hourly earnings of wage-earners have been proportionately greater than in weekly wages, the gains in 1958 over 1949 amounting to 68.2 p.c. for men and 58.8 p.c. for women.

Variations in the magnitude of the changes shown in the general and group averages and in the year-to-year comparisons are obviously related to varying economic and other conditions affecting the component industries in the survey periods, as well as to the industrial and, in some cases, the area distributions of the reported employees. Tables 15 and 16 show the 1958 averages of hours and earnings for wage-earners and salaried employees, respectively, for the provinces, the six largest metropolitan areas, the major industry groups and several important industries. It will be noted that women earn consistently lower average earnings than men in the same area or industry unit. This results not only from pay differentials and occupational differences, but also from such factors as a frequently shorter work week for women, a greater incidence of part-time work and absenteeism among them, their higher proportions of younger and less experienced workers, and their industrial distributions.

Salaried employees comprise increasing proportions of manufacturing staffs as a whole. Table 17 shows that the proportion of salaried employees has risen from 17.6 p.c. in 1949 to 24.4 p.c. in 1958. This trend is associated with developments in planning,

* More detailed information is given in DBS annual report *Earnings and Hours of Work in Manufacturing* (Catalogue No. 72-204).

administration and record-keeping which have increased requirements for professional and clerical personnel, and with changes in manufacturing processes which have frequently reduced employment for production workers per unit produced. Changes in industrial distributions of the employees reported also contribute to variations in the ratio of salaried personnel to wage-earners, which in any one period may be further influenced by seasonal, market and other conditions affecting levels of production. These usually cause sharper fluctuations in numbers of wage-earners than of salaried employees.

14.—Average Earnings of Male and Female Workers and Increases over the Preceding Year, Weeks Ended Oct. 31, 1949-58

(As reported by manufacturers usually employing 15 or more persons.)

Year	Men			Women			Both Sexes		
	Average Earnings	Increase over Preceding Year		Average Earnings	Increase over Preceding Year		Average Earnings	Increase over Preceding Year	
AVERAGE HOURLY EARNINGS OF WAGE-EARNERS									
	\$	\$	p.c.	\$	\$	p.c.	\$	\$	p.c.
1949.....	1.07	0.05	4.9	0.68	0.03	4.6	0.98	0.03	3.2
1950.....	1.14	0.07	6.5	0.72	0.04	5.9	1.06	0.08	8.2
1951.....	1.31	0.17	14.9	0.82	0.10	13.9	1.22	0.16	15.1
1952.....	1.40	0.09	6.9	0.86	0.04	4.9	1.30	0.08	6.6
1953.....	1.47	0.07	5.0	0.91	0.05	5.8	1.36	0.06	4.6
1954.....	1.51	0.04	2.7	0.93	0.02	2.2	1.40	0.04	2.9
1955.....	1.57	0.06	4.0	0.95	0.02	2.2	1.44	0.04	2.9
1956.....	1.66	0.09	5.7	1.00	0.05	5.3	1.53	0.09	6.2
1957.....	1.75	0.09	5.4	1.05	0.05	5.0	1.61	0.08	5.2
1958.....	1.80	0.05	2.9	1.08	0.03	2.9	1.65	0.04	2.5
AVERAGE WEEKLY WAGES									
	\$	\$	p.c.	\$	\$	p.c.	\$	\$	p.c.
1949.....	47.33	1.60	3.5	27.18	1.27	4.9	42.61	1.36	3.3
1950.....	50.93	3.60	7.6	29.00	1.82	6.7	45.94	3.33	7.8
1951.....	56.46	5.53	10.9	31.27	2.27	7.8	51.32	5.38	11.7
1952.....	60.85	4.39	7.8	34.17	2.90	9.3	55.17	3.85	7.5
1953.....	62.71	1.86	3.1	35.07	0.90	2.6	56.75	1.58	2.9
1954.....	63.98	1.27	2.0	35.90	0.83	2.4	57.99	1.24	2.2
1955.....	66.86	2.88	4.5	37.52	1.62	4.5	60.53	2.54	4.4
1956.....	70.67	3.81	5.7	39.29	1.77	4.7	63.97	3.44	5.7
1957.....	72.21	1.54	2.2	39.49	0.20	0.5	65.31	1.34	2.1
1958.....	75.03	2.82	3.9	41.90	2.41	6.1	67.85	2.54	3.9
AVERAGE WEEKLY SALARIES									
	\$	\$	p.c.	\$	\$	p.c.	\$	\$	p.c.
1949.....	65.37	1.90	3.0	32.62	1.36	4.4	54.85	1.94	3.7
1950.....	69.35	3.98	6.1	34.38	1.76	5.4	58.74	3.89	7.1
1951.....	77.55	8.20	11.8	38.42	4.04	11.8	65.98	7.24	12.3
1952.....	82.60	5.05	6.5	41.26	2.84	7.4	70.75	4.77	7.2
1953.....	86.43	3.83	4.6	43.13	1.87	4.5	73.87	3.12	4.4
1954.....	90.99	4.56	5.3	45.00	1.87	4.3	77.81	3.94	5.3
1955.....	93.50	2.51	2.8	47.02	2.02	4.5	80.57	2.76	3.5
1956.....	99.05	5.55	5.9	49.31	2.29	4.9	85.23	4.66	5.8
1957.....	104.63	5.58	5.6	51.84	2.53	5.1	89.92	4.69	5.5
1958.....	108.34	3.71	3.5	54.07	2.23	4.3	93.74	3.82	4.2

15.—Average Hours and Earnings of Male and Female Wage-Earners for the Last Week of October 1953

Province, Metropolitan Area and Industry	Average Hours Worked			Average Hourly Earnings			Average Weekly Earnings		
	Men	Women	Both Sexes	Men	Women	Both Sexes	Men	Women	Both Sexes
Province	No.	No.	No.	\$	\$	\$	\$	\$	\$
Newfoundland.....	38.2	32.2	37.5	1.62	0.61	1.51	61.91	19.58	56.77
Nova Scotia.....	40.5	40.9	40.5	1.54	0.69	1.41	62.31	28.09	57.27
New Brunswick.....	43.4	38.3	42.6	1.48	0.77	1.38	64.36	29.61	58.78
Quebec.....	42.9	38.8	41.8	1.64	1.02	1.48	70.50	39.37	61.74
Ontario.....	41.6	39.0	41.0	1.88	1.15	1.74	78.32	44.87	71.45
Manitoba.....	41.3	38.7	40.7	1.72	0.99	1.56	70.94	38.29	63.75
Saskatchewan.....	40.8	38.7	40.5	1.76	1.15	1.68	71.88	44.56	68.13
Alberta.....	40.9	37.5	40.5	1.82	1.26	1.75	74.45	47.31	70.97
British Columbia.....	39.3	35.7	39.0	2.09	1.39	2.03	81.97	49.78	78.96
Canada.....	41.7	38.7	41.1	1.80	1.08	1.65	75.03	41.90	67.85
Metropolitan Area									
Montreal.....	42.4	38.5	41.2	1.73	1.08	1.53	73.30	41.70	63.10
Toronto.....	41.6	39.3	41.0	1.89	1.16	1.70	78.75	45.45	69.87
Hamilton.....	40.5	38.4	40.1	2.09	1.20	1.95	84.73	45.93	78.36
Windsor.....	39.6	37.6	39.3	2.03	1.40	1.96	80.21	52.80	77.06
Winnipeg.....	41.3	38.7	40.7	1.70	1.00	1.54	70.15	38.80	62.88
Vancouver.....	39.0	36.1	38.5	2.09	1.39	1.99	81.88	50.20	76.63
Industry									
Foods and beverages.....	43.0	37.9	41.6	1.59	1.05	1.46	68.24	39.93	60.60
Meat products.....	41.8	39.0	41.4	1.82	1.36	1.72	76.07	53.00	71.25
Canned and preserved fruits and vegetables.....	44.1	35.3	39.9	1.34	0.87	1.14	58.89	30.72	45.59
Bread and other bakery products.....	43.8	39.5	43.0	1.58	0.95	1.48	69.34	37.40	63.48
Tobacco and tobacco products.....	41.4	38.5	39.6	1.84	1.50	1.64	76.30	57.60	64.92
Rubber products.....	42.5	39.7	41.9	1.86	1.21	1.74	78.86	48.19	72.80
Leather products.....	40.9	38.4	39.8	1.34	0.91	1.15	54.95	34.88	45.82
Textile products (except clothing).....	43.2	39.6	42.0	1.37	1.05	1.27	59.40	41.51	53.20
Cotton yarn and broad woven goods.....	40.4	37.3	39.3	1.32	1.12	1.25	53.18	41.81	49.24
Clothing (textile and fur).....	41.0	38.2	38.9	1.49	0.97	1.10	61.01	36.91	42.98
Men's clothing.....	38.3	37.1	37.5	1.48	0.97	1.12	56.57	36.08	41.78
Women's clothing.....	39.5	37.1	37.5	1.77	1.04	1.17	69.92	38.37	43.68
Knit goods.....	45.4	41.1	42.3	1.81	0.91	1.03	59.41	37.49	43.64
Wood products.....	43.0	40.5	42.9	1.47	1.13	1.45	63.33	45.76	62.25
Saw and planing mills.....	42.4	40.4	42.4	1.64	1.24	1.53	65.35	50.05	64.73
Furniture.....	44.5	41.0	44.2	1.37	1.12	1.36	61.10	46.08	59.85
Paper products.....	41.6	40.2	41.5	2.02	1.11	1.93	84.20	44.69	80.07
Pulp and paper mills.....	41.3	38.2	41.2	2.10	1.23	2.08	86.66	46.94	85.97
Other paper products.....	43.0	40.5	42.1	1.74	1.10	1.53	74.58	44.37	64.49
Printing, publishing and allied industries.....	40.1	37.8	39.6	2.19	1.12	1.98	87.83	42.51	78.47
Iron and steel products.....	41.2	39.0	41.1	1.96	1.38	1.93	80.66	53.84	79.45
Iron castings.....	41.8	37.0	41.8	1.86	1.43	1.86	77.87	52.86	77.48
Machinery manufacturing.....	41.4	40.1	41.3	1.82	1.40	1.80	75.43	56.16	74.26
Primary iron and steel.....	40.4	34.9	40.3	2.30	1.87	2.30	92.90	65.45	92.66
Transportation equipment.....	40.4	38.3	40.3	1.94	1.48	1.92	78.11	56.74	77.35
Aircraft and parts.....	40.8	35.9	40.7	1.98	1.53	1.97	80.70	54.97	80.10
Motor vehicles.....	41.6	42.1	41.6	2.09	1.76	2.09	87.02	73.99	86.76
Motor vehicle parts and accessories.....	41.2	37.9	40.7	1.95	1.50	1.89	80.32	57.04	77.04
Railroad and rolling-stock equipment.....	39.2	--	39.2	1.79	--	1.79	70.22	--	70.17
Shipbuilding and repairing.....	38.4	41.3	38.4	1.85	0.93	1.83	70.95	38.35	70.46
Non-ferrous metal products.....	39.9	40.5	40.0	2.01	1.05	1.94	80.28	42.65	77.53
Smelting and refining.....	37.9	--	37.9	2.20	--	2.20	83.67	--	83.56
Electrical apparatus and supplies.....	41.4	39.5	40.8	1.88	1.35	1.72	77.93	53.34	70.37
Non-metallic mineral products.....	44.4	39.9	44.1	1.73	1.24	1.70	76.72	49.44	74.83
Products of petroleum and coal.....	40.8	--	40.8	2.28	--	2.28	93.16	--	92.83
Chemical products.....	41.7	39.3	41.3	1.93	1.14	1.81	80.46	44.78	74.54
Miscellaneous manufacturing industries.....	43.0	40.6	42.1	1.56	1.02	1.36	67.28	41.89	57.36
Averages, Durable Goods.....	41.4	39.5	41.3	1.84	1.30	1.80	76.20	51.55	74.20
Averages, Non-durable Goods.....	42.0	38.6	40.9	1.75	1.03	1.52	73.57	39.83	62.18
Averages, Manufacturing Industries.....	41.7	38.7	41.1	1.80	1.08	1.65	75.03	41.90	67.85

**16.—Average Hours and Earnings of Male and Female Salaried Employees for the
Last Week of October 1958**

Province, Metropolitan Area and Industry	Average Hours Worked			Average Weekly Earnings		
	Men	Women	Both Sexes	Men	Women	Both Sexes
Province	No.	No.	No.	\$	\$	\$
Newfoundland.....	41.8	39.2	41.3	94.01	44.82	85.87
Nova Scotia.....	39.3	37.4	38.8	92.58	42.67	79.60
New Brunswick.....	41.0	37.5	40.0	87.38	42.67	75.00
Quebec.....	38.7	36.9	38.2	106.18	53.83	92.43
Ontario.....	38.7	37.4	38.4	111.44	55.16	95.67
Manitoba.....	39.0	37.9	38.7	93.07	46.44	81.25
Saskatchewan.....	39.0	38.1	38.8	90.92	49.83	79.17
Alberta.....	40.1	38.3	39.7	103.01	51.90	81.13
British Columbia.....	38.9	37.9	38.7	113.14	55.34	99.75
Canada.....	38.8	37.6	38.5	108.34	54.07	93.74
Metropolitan Area						
Montreal.....	38.2	37.3	38.0	109.48	56.35	94.74
Toronto.....	38.1	37.1	37.8	112.59	57.21	95.64
Hamilton.....	39.1	38.3	38.9	119.70	54.59	101.65
Windsor.....	39.1	38.7	39.0	119.00	66.06	106.93
Winnipeg.....	39.0	37.9	38.7	93.95	46.62	81.59
Vancouver.....	38.5	37.7	38.3	112.48	55.89	97.35
Industry						
Foods and beverages.....	39.7	37.7	39.2	95.84	51.59	84.12
Meat products.....	39.5	38.5	39.3	96.33	55.49	88.17
Canned and preserved fruits and vegetables.....	40.2	38.6	39.7	96.05	53.21	83.47
Bread and other bakery products.....	42.6	37.7	41.1	86.67	47.78	74.38
Tobacco and tobacco products.....	37.9	37.7	37.8	111.40	62.20	94.54
Rubber products.....	38.9	38.3	38.7	103.39	52.40	89.46
Leather products.....	39.4	37.6	38.8	87.98	45.00	73.76
Textile products (except clothing).....	39.1	37.1	38.5	100.83	49.84	85.27
Cotton yarn and broad woven goods.....	38.9	37.0	38.3	95.41	47.00	80.80
Clothing (textile and fur).....	40.0	38.2	39.2	94.82	51.05	76.59
Men's clothing.....	39.4	38.3	38.9	90.63	46.87	74.16
Women's clothing.....	39.9	38.2	39.1	97.16	57.79	78.72
Knit goods.....	41.0	38.0	39.7	94.00	46.27	73.94
Wood products.....	40.9	37.8	40.1	97.23	49.86	86.00
Saw and planing mills.....	41.6	38.9	41.1	98.08	50.09	88.89
Furniture.....	39.6	37.0	38.8	97.15	49.17	82.10
Paper products.....	37.5	36.6	37.2	126.68	57.64	109.48
Pulp and paper mills.....	37.7	36.7	37.5	135.89	61.35	120.04
Other paper products.....	37.1	36.5	36.9	109.00	53.36	91.73
Printing, publishing and allied industries.....	37.4	37.1	37.3	101.61	52.10	82.32
Iron and steel products.....	38.9	37.6	38.6	108.78	53.57	95.77
Iron castings.....	39.0	37.0	38.5	103.87	50.70	91.51
Machinery manufacturing.....	38.5	37.6	38.3	101.71	51.31	89.18
Primary iron and steel.....	39.0	38.5	38.9	126.60	60.50	113.16
Transportation equipment.....	39.4	38.4	39.2	112.24	59.15	101.25
Aircraft and parts.....	38.9	37.7	38.7	112.70	56.04	100.44
Motor vehicles.....	40.3	40.4	40.3	120.91	71.13	110.81
Motor vehicle parts and accessories.....	39.2	38.5	39.0	112.13	59.09	99.58
Railroad and rolling-stock equipment.....	39.5	38.8	39.4	101.85	58.37	96.77
Shipbuilding and repairing.....	39.0	38.6	38.6	101.41	47.39	90.97
Non-ferrous metal products.....	38.3	37.2	38.1	119.18	56.06	105.18
Smelting and refining.....	38.6	37.6	38.5	124.43	61.94	117.24
Electrical apparatus and supplies.....	38.8	38.2	38.6	109.36	55.74	95.78
Non-metallic mineral products.....	38.9	38.7	38.4	104.64	52.84	93.21
Products of petroleum and coal.....	36.5	35.8	36.3	134.83	63.91	119.14
Chemical products.....	38.0	37.4	37.8	115.96	56.89	98.72
Miscellaneous manufacturing industries.....	38.4	37.4	38.1	104.68	52.01	87.24
Averages, Durable Goods.....	39.1	37.8	38.8	109.58	55.15	97.07
Averages, Non-durable Goods.....	38.5	37.4	38.2	107.03	53.30	90.57
Averages, Manufacturing Industries.....	38.8	37.6	38.5	108.34	54.07	93.74

17.—Proportions of Reported Employees classified as Salaried Staff, 1949-58

Year	Durable Goods			Non-durable Goods			All Manufacturing		
	Men	Women	Both Sexes	Men	Women	Both Sexes	Men	Women	Both Sexes
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1949.....	13.8	42.0	17.0	18.4	17.7	18.1	15.9	22.9	17.6
1950.....	14.4	40.8	17.5	19.9	18.2	19.3	16.9	23.4	18.5
1951.....	15.5	46.4	18.8	20.9	19.8	20.5	17.9	26.0	19.7
1952.....	16.4	46.1	19.6	22.1	19.2	21.1	18.9	25.6	20.4
1953.....	17.3	45.1	20.6	22.7	20.3	21.9	19.6	26.6	21.2
1954.....	19.2	47.6	22.6	24.2	21.1	22.2	20.6	27.8	22.2
1955.....	18.9	45.0	22.0	23.5	20.6	22.6	20.9	27.0	22.3
1956.....	19.4	47.5	22.8	24.1	20.9	23.0	21.4	27.8	22.9
1957.....	20.8	49.8	24.3	24.0	22.2	23.4	22.2	29.2	23.8
1958.....	21.9	48.6	25.0	24.7	22.2	23.9	23.2	28.7	24.4

18.—Percentage Distribution of Male and Female Wage-Earners, by Range of Hours Worked, Week Ended Oct. 31, 1958

Range of Hours	Durable Goods			Non-durable Goods			All Manufacturing		
	Men	Women	Both Sexes	Men	Women	Both Sexes	Men	Women	Both Sexes
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
30 or less.....	4	7	4	5	13	7	5	12	6
31 - 34.....	5	6	5	3	7	5	4	7	5
35 - 39.....	7	12	7	10	16	12	8	15	10
40.....	45	45	45	35	27	32	40	31	38
41 - 43.....	10	11	10	11	12	11	11	12	11
44.....	4	4	4	5	5	5	4	5	5
45 - 47.....	9	8	9	10	10	10	9	10	9
48.....	5	3	5	7	3	6	6	3	5
49 - 50.....	3	2	3	4	3	3	4	2	3
51 - 53.....	3	1	3	3	2	3	3	2	3
54.....	1	--	1	1	1	1	1	--	1
55 - 64.....	3	1	3	5	1	4	4	1	3
65 or over.....	1	--	1	1	--	1	1	--	1

Section 4.—Wage Rates, Hours of Labour and Other Working Conditions

Statistics on occupational wage rates by industry and region or city, and standard weekly hours of labour are compiled by the federal Department of Labour and published in the annual report *Wage Rates, Salaries and Hours of Labour*. The statistics published are based on an annual survey covering some 20,000 establishments in most industries and apply to the last normal pay period preceding Oct. 1.

Average wage rates of time workers and average straight-time earnings of piece workers and other incentive workers in a given occupation are shown separately but are combined in the calculation of index numbers. Predominant ranges of rates for each occupation used are also given. Overtime pay is excluded.

The industry index numbers measure changes in wage rates for non-office employees below the rank of foreman. They do not, however, provide a basis for comparing the level of wages in one industry with that in another. More detailed information on concepts and methods of developing these statistics is given in the annual report.

19.—Index Numbers of Average Wage Rates for Certain Main Industrial Groups, 1949-58

(1949=100)

NOTE.—Indexes back to 1901 may be obtained from the Department of Labour publication *Wage Rates and Hours of Labour 1957*.

Year	Logging	Coal Mining	Metal Mining	Manufacturing			Construction	Railways	Telephone	Personal Service	General Average
				Durable Goods	Non-durable Goods	All Manufacturing					
1949.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1950.....	97.0	102.8	106.8	106.6	105.6	106.1	104.8	105.1	104.8	102.9	105.5
1951.....	109.6	111.1	121.6	121.7	118.8	120.3	118.6	121.9	115.7	110.6	119.1
1952.....	133.3	124.0	130.1	130.2	126.5	128.4	128.6	136.8	128.4	117.6	127.7
1953.....	135.5	124.0	132.3	136.3	132.8	134.6	136.2	137.2	136.6	123.3	133.6
1954.....	138.0	123.5	136.7	140.0	136.9	138.5	140.0	137.8	147.6	128.6	137.9
1955.....	138.2	122.8	140.3	143.7	140.7	142.2	145.4	137.8	152.8	132.3	141.7
1956.....	160.8	123.6	150.8	151.2	148.3	149.8	150.7	146.8	157.6	136.1	148.7
1957.....	168.4	137.4	156.2	160.7	156.3	158.6	160.7	153.3	165.9	138.9	156.5
1958.....	172.0	147.6	160.8	166.1	162.2	164.2	171.0	153.3	175.4	143.5	162.6

20.—Index Numbers of Average Wage Rates, by Industry, 1955-58

(1949=100)

Industry	1955	1956	1957	1958
Logging.....	138.2	160.8	168.4	172.0
Eastern Canada.....	136.9	163.0	169.5	173.6
British Columbia, coastal.....	143.7	151.2	163.6	165.2
Mining.....	134.9	142.4	150.4	156.7
Metal mining.....	140.3	150.8	156.2	160.8
Gold mining.....	126.0	141.4	143.4	145.4
Other metal mining.....	149.1	156.6	164.1	170.3
Coal mining.....	122.8	123.6	137.4	147.6
Manufacturing.....	142.2	149.8	158.6	164.2
Foods and beverages.....	140.3	147.9	156.7	164.8
Slaughtering and meat packing.....	144.2	151.2	161.4	169.7
Dairy products.....	138.1	143.7	151.4	160.0
Canned and cured fish.....	125.8	135.6	140.8	146.1
Flour mills.....	155.6	158.7	166.7	174.2
Biscuits.....	149.4	159.5	168.9	177.9
Bread and other bakery products.....	139.4	150.0	159.1	168.3
Breweries.....	167.9	168.6	181.3	188.1
Confectionery.....	145.4	153.7	164.2	174.7
Tobacco, cigars and cigarettes.....	160.3	164.8	174.6	184.4
Rubber products.....	139.6	145.0	150.4	153.2
Leather products.....	134.5	143.8	151.5	155.2
Boots and shoes.....	134.2	144.6	151.5	154.2
Leather tanneries.....	135.8	140.5	151.3	159.2
Textile products (except clothing).....	131.0	135.7	141.6	146.4
Cotton yarn and broad woven goods.....	131.5	138.6	143.0	145.8
Woolen and worsted woven goods and yarn.....	137.3	139.7	148.6	155.3
Synthetic and silk textiles.....	125.3	128.1	133.8	140.3
Clothing (textile and fur).....	129.7	136.4	144.0	149.1
Men's clothing.....	134.7	143.4	150.4	155.7
Men's and boys' suits and overcoats.....	133.3	143.4	148.3	153.1
Men's fine shirts.....	136.8	137.8	151.3	160.6
Work clothing and sportswear.....	136.6	147.6	154.7	158.5
Women's clothing.....	121.2	125.0	133.1	136.9
Women's and misses' coats and suits.....	125.2	126.7	135.6	138.8
Women's and misses' dresses.....	118.8	123.9	131.6	135.7
Hosiery and other knitted goods.....	135.0	141.8	149.4	154.1
Fur goods.....	122.4	120.8	138.8	148.7

20.—Index Numbers of Average Wage Rates, by Industry, 1955-58—concluded

Industry	1955	1956	1957	1958
Manufacturing—concluded				
Wood products.....	136.4	142.9	152.6	155.6
Sash and door, and planing mills.....	138.0	144.4	152.8	157.1
Sawmills.....	138.1	144.6	155.5	156.8
Wooden furniture.....	131.1	137.5	145.2	151.6
Paper products.....	151.7	162.7	171.6	175.4
Paper boxes and containers.....	142.0	149.3	158.3	167.3
Pulp and paper.....	153.6	165.2	174.1	177.0
Pulp.....	150.9	162.0	171.2	174.7
Newsprint.....	151.8	162.7	170.8	173.4
Paper other than newsprint.....	155.1	165.3	175.8	177.7
Printing, publishing and allied industries.....	146.9	152.5	159.5	166.3
Printing and publishing other than daily newspapers.....	141.6	146.7	153.7	161.5
Daily newspapers.....	155.8	162.5	169.5	174.6
Iron and steel products.....	148.0	156.4	165.2	170.9
Agricultural implements.....	144.6	143.5	152.0	162.1
Heating and cooking apparatus.....	149.3	161.4	170.1	172.2
Household, office, store and industrial machinery.....	147.5	153.5	161.4	170.1
Iron castings.....	145.1	153.9	161.8	167.2
Machine shop products.....	150.4	156.3	164.2	169.2
Primary iron and steel.....	148.9	165.3	176.0	177.8
Sheet metal products.....	150.8	157.9	166.2	172.2
Transportation equipment.....	142.3	149.9	158.8	165.1
Aircraft and parts.....	153.3	163.6	169.9	173.4
Auto repair and garages.....	144.8	155.6	164.9	
Motor vehicles.....	134.1	142.7	152.6	156.6
Motor vehicle parts and accessories.....	147.1	157.4	166.2	170.6
Railroad and rolling-stock equipment.....	137.1	140.2	148.7	155.6
Shipbuilding and repairing.....	144.6	148.0	157.1	164.1
Brass and copper products.....	149.4	153.7	166.0	175.3
Electrical apparatus and supplies.....	142.8	149.9	160.2	166.2
Heavy electrical machinery and equipment.....	143.3	148.9	158.5	166.3
Radio, television and other electronic equipment.....	138.8	145.3	150.0	159.6
Refrigerators, vacuum cleaners and miscellaneous electrical products.....	143.5	151.0	162.6	167.5
Clay products.....	149.2	161.0	170.7	173.5
Petroleum refining and products.....	154.0	164.0	176.1	178.4
Chemical products.....	150.3	160.2	169.4	177.3
Acids, alkalis and salts.....	153.2	164.2	175.1	184.1
Medicinal, pharmaceutical and toilet preparations.....	144.5	155.5	164.2	172.1
Paints, varnishes and lacquers.....	155.0	162.6	170.9	177.7
Durable goods ¹	143.7	151.2	160.7	166.1
Non-durable goods ¹	140.7	148.3	156.3	162.2
Construction (buildings and structures only).....	145.4	150.7	160.7	171.0
Transportation, Storage and Communication.....	142.9	152.0	159.6	163.3
Transportation.....	141.1	151.0	158.4	160.9
Railways.....	137.8	146.3	153.3	153.3
Urban and suburban transportation systems.....	143.5	153.3	158.8	171.2
Truck transportation.....	149.0	158.3	169.8	173.4
Water transportation.....	142.1	164.7	166.7	174.5
Storage (terminal grain elevators only).....	148.0	154.7	163.1	174.3
Communication (telephone only).....	152.8	157.6	165.9	175.4
Electric Light and Power.....	158.1	169.7	179.2	192.5
Trade.....	142.2	146.2	153.5	160.1
Wholesale trade.....	148.5	157.5	165.8	173.5
Retail trade.....	139.8	141.8	148.7	154.9
Personal Service.....	132.3	136.1	138.9	143.5
Laundries.....	134.0	140.9	148.5	157.6
Restaurants.....	132.0	135.3	137.2	141.0
General Index, All Industries.....	141.7	148.7	156.5	162.6

¹ These groups are composites of the manufacturing groups listed above. Durable goods include wood products, iron and steel products, transportation equipment, brass and copper products, electrical apparatus and supplies and clay products; non-durable goods include all other manufacturing industries.

21.—Average Wage and Salary Rates for Selected Occupations in Certain Cities, Oct. 1, 1959

(Time work)

Industry and Occupation	Halifax	Montreal	Toronto	Hamilton	Winnipeg	Edmonton	Vancouver
	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.	\$ per hr.
Construction (buildings and structures only)—							
Bricklayer and mason.....	2.21	2.40	3.00	2.80	2.60	2.70	2.87
Carpenter.....	1.95	2.20	2.80	2.50	2.40	2.45	2.80
Electrician.....	2.06	2.35	3.30	3.15	2.65	2.75	3.10
Painter.....	1.70	2.10	2.41	2.15	2.10	2.00	2.70
Plasterer.....	1.98	2.35	2.80	2.75	2.60	2.60	2.85
Plumber.....	2.11	2.47	3.14	2.90	2.70	2.70	2.90
Sheet metal worker.....	1.84	2.20	3.05	2.60	2.35	2.70	2.87
Labourer.....	1.41	1.60	1.80	1.70	1.55	1.70	2.07
Truck driver.....	1.45	1.60	1.80	1.70	1.65	1.70	2.21
Urban and Suburban Transportation Systems—							
Operator ¹	1.81	1.83	2.00	1.92	1.90	2.02	2.20
Body repairman.....	..	1.96	2.15	1.96	2.00	2.14	2.36
Repairman.....	1.74	1.93	2.05	1.97	1.95	..	..
Electrician.....	1.90	1.97	2.16	1.97	2.00	2.37	2.34
Labourer.....	..	1.57	1.72	..	1.53	..	..
Printing, Publishing and Allied Industries—							
Daily Newspapers—							
Compositor, hand and linotype operator.....	2.56	3.19	3.33	2.76	2.31	2.45	3.07
Pressman.....	2.56	3.14	3.33	2.73	2.26	2.45	3.07
Other than Daily Newspapers—							
Compositor, hand.....	1.93	2.49	2.60	2.34	2.23	2.37	2.73
Pressman, cylinder.....	..	2.40	2.41	2.35	2.16	2.37	2.81
Manufacturing—							
Labourer, male.....	1.39	1.44	1.57	1.70	1.45	1.60	1.80
Maintenance Trades—							
Carpenter.....	1.63	1.95	1.99	2.24	1.98	2.04	2.40
Electrician.....	..	2.15	2.22	2.44	2.14	2.34	2.43
Machinist.....	1.80	2.09	2.14	2.49	1.95	2.32	2.44
Mechanic.....	1.73	2.00	2.09	2.39	1.93	2.02	2.39
Millwright.....	..	2.06	2.15	2.17	1.96	2.21	2.54
Welder.....	1.84	2.05	2.03	2.31	1.92	2.26	2.33
	\$ per wk.	\$ per wk.	\$ per wk.	\$ per wk.	\$ per wk.	\$ per wk.	\$ per wk.
Office Occupations, Male—							
Bookkeeper, senior.....	..	89.32	90.14	96.12	84.04	92.01	98.29
Clerk, intermediate.....	55.34	70.34	72.64	78.12	64.64	74.54	79.83
Clerk, senior.....	70.01	92.95	91.15	98.55	82.85	99.93	101.30
Order clerk.....	52.22	73.84	75.82	80.70	62.04	70.07	79.47
Draftsman, intermediate.....	..	84.36	80.69	84.20	72.10	73.33	89.21
Draftsman, senior.....	85.93	106.39	100.51	101.91	89.74	94.96	106.26
Office Occupations, Female—							
Clerk, intermediate.....	42.73	58.30	57.65	56.00	47.83	53.41	56.34
Machine Operator—							
Bookkeeping.....	45.42	57.81	58.38	53.44	49.88	53.95	56.13
Calculating.....	..	54.63	55.60	55.50	51.51	50.34	54.41
Payroll clerk.....	..	57.15	58.88	53.41	48.34	57.06	56.91
Secretary, senior.....	55.31	75.42	73.24	72.00	62.28	62.73	70.63
Stenographer, senior.....	50.77	62.34	61.77	61.82	52.50	57.31	59.53
Stenographer, junior.....	38.74	53.39	56.51	50.60	43.12	49.52	48.35
Typist, senior.....	44.04	55.40	56.02	51.97	46.99	53.17	54.54
Typist, junior.....	38.76	46.87	48.66	46.31	39.96	44.89	46.31
Switchboard operator.....	42.46	53.59	54.41	52.15	44.13	48.88	50.99

¹ Maximum rates based on length of service.

**22.—Average Standard or Normal Hours of Labour per Week for Employees in
Selected Industries, by Province, 1954-58**

Industry and Year	Atlantic Prov- inces ¹	Quebec	Ontario	Manitoba	Saskat- chewan	Alberta	British Columbia
	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.	hrs.
Work clothing.....1954	44.0	44.2	40.9	40.0	..	40.0	40.9
.....1955	44.0	43.1	40.7	40.0	..	..	40.5
.....1956	41.7	43.4	40.8	40.0	..	40.0	40.4
.....1957	42.0	42.4	41.0	40.0	..	40.0	40.0
.....1958	41.9	42.7	41.0	40.0	..	40.0	40.0
Pulp and paper.....1954	41.1	41.6	40.6	40.0	..	..	40.0
.....1955	41.3	40.7	40.5	..	..	..	40.0
.....1956	41.3	40.7	40.6	..	..	..	40.0
.....1957	41.1	40.3	40.5	..	..	..	40.0
.....1958	41.1	40.2	40.2	..	..	..	40.0
Wood products.....1954	51.0	51.2	46.0	44.2	44.0	45.5	40.7
.....1955	50.2	50.0	45.8	44.2	44.0	44.7	40.6
.....1956	50.1	50.0	45.4	44.2	44.0	44.8	40.3
.....1957	49.5	50.2	44.6	44.3	44.0	44.3	40.2
.....1958	49.4	49.6	44.6	43.8	44.0	44.1	40.2
Meat products.....1954	40.9	42.0	41.5	40.2	40.3	40.0	40.0
.....1955	40.6	41.9	41.8	40.3	40.3	40.0	40.0
.....1956	40.4	41.6	41.9	40.2	40.2	40.0	40.0
.....1957	40.0	40.8	42.2	40.2	40.0	40.0	40.0
.....1958	40.0	40.7	42.2	40.1	40.0	40.0	40.0
Iron and its products.....1954	40.7	43.2	41.0	43.7	42.8	41.6	40.1
.....1955	40.6	43.2	40.9	42.8	42.3	41.2	40.2
.....1956	40.4	43.0	40.8	41.2	41.0	41.5	40.1
.....1957	40.3	42.7	40.6	41.1	40.3	41.4	40.2
.....1958	40.2	42.7	40.5	41.2	40.2	40.9	40.2
Woollen yarn and cloth.....1954	44.2	45.9	45.3	42.5	..	..	42.3
.....1955	43.8	46.5	44.7	40.3	..	..	42.3
.....1956	43.8	46.4	44.7	41.1	..	..	42.3
.....1957	42.3	46.7	44.5	..	..	..	..
.....1958	43.3	46.7	44.2	..	..	..	..

¹ Exclusive of Newfoundland.

Table 23 gives summary data on working conditions of plant and office employees in manufacturing industries for the years 1955 to 1959. The percentages in this table denote the proportions which employees—plant or office—of establishments reporting specific items bear to the total number of all such employees in all establishments replying to the survey; they are not necessarily the proportions of employees actually covered by the various items.

Two columns of percentages, designated as A and B, are given for the year 1959. The percentages in column A are comparable with those for previous years, being based on a similar establishment coverage; the percentages given in column B were compiled on the basis of an expanded mailing list, including as many as possible of the country's manufacturing establishments having 15 or more employees.

It will also be noted that for each of the years 1955 to 1958 the number of establishments shown as having plant employees is identical with the number having office employees, while for 1959 these numbers differ. The explanation is that in 1959 separate counts of establishments having plant workers and establishments having office employees were obtained, while in previous years counts of establishments were obtained without distinguishing between those with both plant and office employees and those with either one or the other only. Year-to-year differences in coverage for 1955 to 1958 are attributed to differences in rates of response or to the fact that all the establishments included in the survey did not necessarily operate in all years.

23.—Summary of Selected Working Conditions of Plant and Office Employees in Manufacturing Industries, 1955-59

Item		1955	1956	1957	1958	1959	
						A ¹	B ¹
COVERAGE							
Plant Employees—							
Reporting establishments.....	No.	6,393	6,166	6,105	6,240	5,882	7,902
Employees.....		765,551	799,365	804,953	758,943	739,120	819,401
Office Employees—							
Reporting establishments.....	No.	6,393	6,166	6,105	6,240	5,748	7,658
Employees.....		196,194	204,881	224,941	226,973	213,275	229,233
PERCENTAGES OF PLANT EMPLOYEES							
Standard Weekly Hours—							
40 and under.....		58	62	66	70	72	70
Over 40 and under 44.....		11	11	11	9	9	9
44.....		7	6	5	4	4	5
45.....		11	9	9	8	7	8
Over 45 and under 48.....		2	2	2	2	1	1
48.....		7	6	4	4	4	4
Over 48.....		4	4	3	3	3	3
Employees on a five-day week.....		84	86	88	88	90	89
Vacation with Pay—							
Two weeks with pay.....		92	92	95	95	96	94
After: 1 year or less.....		15	15	18	23	23	23
2 years.....		11	11	13	14	14	14
3 years.....		27	28	30	28	29	28
5 years.....		55	54	51	28	27	26
Other periods.....		4	4	3	2	3	3
Three weeks with pay.....		60	63	68	73	76	71
After: Less than 10 years.....		1	1	1	4	5	5
10 years.....		9	3	5	8	9	8
11 - 14 years.....		1	1	2	4	5	4
15 years.....		43	47	61	50	50	47
20 years.....		6	6	6	4	3	3
Other periods.....		7	5	4	3	4	4
Four weeks with pay.....		7	10	12	16	28	26
After: 25 years.....		6	7	10	18	24	22
Other periods.....		1	3	2	4	4	4
Paid Statutory Holidays.....		94	94	97	97	97	95
1 to 5.....		14	12	11	10	9	10
6.....		13	8	7	6	7	7
7.....		11	12	11	11	9	9
8.....		47	52	54	52	54	52
9.....		7	8	11	15	15	14
More than 9.....		2	2	3	3	3	3
Pension and Insurance Plans—							
Pension plans.....		61	65	69	69	72	67
Group life insurance.....		86	87	89	90	91	88
Wage loss insurance.....		75	77	79	82	78	75
PERCENTAGES OF OFFICE EMPLOYEES							
Standard Weekly Hours—							
Under 37½.....		22	23	23	26	27	27
37½.....		38	41	41	41	43	42
Over 37½ and under 40.....		12	10	9	10	10	9
40.....		20	21	22	19	17	18
Over 40.....		8	6	5	4	3	4
Employees on a five-day week.....		89	91	92	93	95	95
Vacation with Pay—							
Two weeks with pay.....		99	99	99	99	99	98
After: 1 year or less.....		90	90	91	89	91	89
2 years.....		5	5	5	6	5	6
3 years.....		1	1	1	1	2	2
5 years.....		1	2	1	2	1	1
Other periods.....		2	1	1	1	—	—

¹ See text on p. 781.

23.—Summary of Selected Working Conditions of Plant and Office Employees in Manufacturing Industries, 1955-59—concluded

Item	1955	1956	1957	1958	1959	
					A ¹	B ¹
PERCENTAGES OF OFFICE EMPLOYEES—concluded						
Vacation with Pay—concluded						
Three weeks with pay.....	69	72	76	82	85	82
After: Less than 10 years.....	2	2	3	5	6	6
10 years.....	3	8	12	16	18	17
11 - 14 years.....	—	1	2	4	6	6
15 years.....	51	51	52	52	51	49
20 years.....	7	6	4	3	2	2
Other periods.....	6	4	3	2	2	2
Four weeks with pay.....	8	13	16	20	34	32
After: 25 years.....	6	9	12	14	26	25
Other periods.....	2	4	4	6	8	7
Paid Statutory Holidays.....	99	99	100	98	99	99
1 to 6.....	7	4	4	4	4	5
7.....	11	10	10	9	8	8
8.....	61	61	61	58	59	58
9.....	15	17	20	22	23	23
More than 9.....	5	7	6	5	5	5
Pension and Insurance Plans—						
Pension plans.....	74	78	81	83	85	82
Group life insurance.....	90	91	94	94	95	93
Wage loss insurance.....	59	58	63	63	53	54

¹ See text on p. 781.

Wages of Farm Labour.—Wage rates for farm help have been increasing slightly over the past few years. Moderate gains were recorded in 1952 and 1953 and after levelling off in 1954 and 1955 the upward trend was resumed in 1956. The information on farm wages is provided by volunteer farm correspondents located in all provinces except Newfoundland.

24.—Average Daily and Monthly Wages of Male Farm Help as at Jan. 15, May 15 and Aug. 15, 1955-59

NOTE.—Figures from 1940 are given in the corresponding table of previous Year Books beginning with the 1943-44 edition.

Province and Year	January 15				May 15				August 15			
	Daily		Monthly		Daily		Monthly		Daily		Monthly	
	With Board	Without Board	With Board	Without Board	With Board	Without Board	With Board	Without Board	With Board	Without Board	With Board	Without Board
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Maritimes—												
1955.....	4.40	5.40	86.00	114.00	4.50	5.40	92.00	118.00	4.80	5.70	98.00	123.00
1956.....	4.60	5.60	90.00	117.00	4.70	5.70	96.00	119.00	5.00	5.80	102.00	125.00
1957.....	4.80	6.00	100.00	120.00	4.80	6.00	100.00	121.00	5.00	6.10	103.00	126.00
1958.....	4.90	5.70	93.00	129.00	5.00	5.80	98.00	130.00	5.00	6.00	98.00	131.00
1959.....	4.90	5.90	98.00	127.00	5.00	5.90	103.00	129.00	4.90	6.10	104.00	138.00
Quebec—												
1955.....	4.60	5.90	91.00	125.00	4.60	5.90	92.00	126.00	5.10	6.20	96.00	131.00
1956.....	4.70	5.90	92.00	123.00	5.10	6.30	100.00	135.00	5.50	6.80	108.00	147.00
1957.....	5.20	6.50	102.00	141.00	5.60	6.60	108.00	145.00	5.80	7.20	113.00	145.00
1958.....	5.30	6.80	103.00	139.00	5.60	6.90	106.00	146.00	5.60	7.30	115.00	149.00
1959.....	5.60	7.00	106.00	145.00	5.50	6.90	110.00	147.00	6.10	7.30	117.00	156.00
Ontario—												
1955.....	4.90	6.10	84.00	115.00	5.20	6.60	91.00	123.00	5.50	6.80	90.00	125.00
1956.....	5.20	6.60	86.00	126.00	5.50	6.80	96.00	131.00	6.00	7.60	104.00	138.00
1957.....	5.50	7.10	98.00	139.00	5.70	7.00	104.00	143.00	6.20	7.80	105.00	141.00
1958.....	5.60	7.10	101.00	139.00	5.90	7.40	106.00	145.00	6.10	8.00	105.00	143.00
1959.....	5.70	7.20	105.00	143.00	6.10	7.50	113.00	154.00	6.40	8.10	116.00	156.00

24.—Average Daily and Monthly Wages of Male Farm Help as at Jan. 15, May 15 and Aug. 15, 1955-59—concluded

Province and Year	January 15				May 15				August 15			
	Daily		Monthly		Daily		Monthly		Daily		Monthly	
	With Board	With-out Board	With Board	With-out Board	With Board	With-out Board	With Board	With-out Board	With Board	With-out Board	With Board	With-out Board
	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Manitoba—												
1955.....	4.20	5.80	75.00	114.00	5.10	6.70	99.00	127.00	5.80	7.10	102.00	128.00
1956.....	4.60	6.80	78.00	116.00	5.50	6.90	110.00	148.00	6.40	7.70	118.00	151.00
1957.....	5.20	7.20	82.00	123.00	5.80	7.40	118.00	151.00	6.80	8.20	121.00	146.00
1958.....	5.40	7.00*	91.00	126.00*	6.30	7.80	126.00	155.00*	6.50	8.20	124.00	157.00
1959.....	5.30	6.80	92.00	127.00	6.10	7.40	128.00	155.00	7.10	8.40	133.00	161.00
Saskatchewan—												
1955.....	4.30	5.80	74.00	109.00	5.40	6.80	116.00	141.00	6.20	7.90	118.00	151.00
1956.....	4.70	6.40	77.00	115.00	5.80	6.90	120.00	150.00	6.60	8.20	127.00	159.00
1957.....	5.10	6.70	82.00	112.00	6.40	7.60	131.00	166.00	7.30	8.90	135.00	168.00
1958.....	5.10	6.90	91.00	125.00	6.50	7.80	137.00	169.00	7.30	8.90	137.00	168.00
1959.....	5.50	7.10	97.00	131.00	6.60	8.00	140.00	170.00	7.30	8.70	142.00	178.00
Alberta—												
1955.....	4.70	6.00	93.00	125.00	5.50	7.30	112.00	145.00	6.10	7.50	115.00	151.00
1956.....	5.00	6.60	94.00	130.00	6.30	7.70	122.00	160.00	6.60	8.00	123.00	157.00
1957.....	5.40	6.80	101.00	137.00	6.40	8.00	130.00	166.00	6.70	8.20	127.00	164.00
1958.....	5.60	7.00	109.00	143.00	6.50	8.40	132.00	171.00	7.30	8.70	132.00	159.00
1959.....	5.60	7.30	112.00	152.00	6.60	8.50	138.00	176.00	7.10	8.50	144.00	183.00
British Columbia—												
1955.....	6.00	8.00	100.00	140.00	6.60	7.90	114.00	153.00	6.70	8.00	115.00	160.00
1956.....	6.20	8.00	101.00	147.00	6.60	7.90	115.00	154.00	7.60	8.50	120.00	165.00
1957.....	7.20	8.40	118.00	171.00	6.60	8.50	127.00	182.00	7.30	8.50	121.00	178.00
1958.....	7.10	8.30	122.00	179.00	7.20	9.00	134.00	186.00	7.40	9.30	130.00	185.00
1959.....	7.00	8.75	128.00	186.00	7.60	9.70	138.00	193.00	7.20	9.40	139.00	195.00
Totals—												
1955.....	4.60	5.80	85.00	119.00	4.90	6.10	103.00	133.00	5.40	6.60	103.00	136.00
1956.....	4.80	6.10	86.00	123.00	5.30	6.50	109.00	143.00	5.80	7.10	115.00	150.00
1957.....	5.20	6.50	96.00	134.00	5.60	6.90	118.00	156.00	6.10	7.50	118.00	153.00
1958.....	5.30	6.60*	101.00	139.00	5.80	7.10	118.00	156.00	6.00	7.60	120.00	154.00
1959.....	5.40	6.80	106.00	144.00	5.80	7.20	123.00	159.00	6.30	7.70	128.00	167.00

Section 5.—Unemployment Insurance

During the depression of the 1930's the necessity arose for some form of systematic unemployment assistance, for legislation that would provide for federal control and administration of such assistance and for an employment service that would be closely related to it. In 1935 the Employment and Social Insurance Act was passed by the Federal Parliament but was subsequently declared invalid by the Privy Council. Later, consent of the provinces was sought to an amendment to the British North America Act to empower the Federal Parliament to legislate on unemployment insurance and in 1940 the Unemployment Insurance Act was passed, making provision for a compulsory contributory unemployment insurance scheme and also for the establishment of a national employment service to operate in conjunction with and ancillary to the unemployment insurance operations carried on under the Act. The Act, which came into effect on July 1, 1941, was later amended on several occasions and was replaced by a new Unemployment Insurance Act passed on July 1, 1955, and effective Oct. 2, 1955.

Legislation provides for compulsory coverage of some four-fifths of non-agricultural employees under an insurance program administered by the Federal Government, and requires employers to join with their insurable employees and the Government in building up a fund. This fund is held in trust by the Unemployment Insurance Commission for the

payment of benefits to unemployed insured persons. The Act is administered by a Commission of three persons appointed by the Governor in Council of whom one is the Chief Commissioner. One Commissioner, other than the Chief Commissioner, is appointed after consultation with employer organizations, and the other after consultation with employee organizations.

The Unemployment Insurance Act applies to all persons employed under a contract of service, except the following: employment in specified industries or occupations such as agriculture, horticulture and forestry (effective Jan. 1, 1956, coverage was also extended to certain employments in these three industries); the Canadian Armed Forces; the permanent public service of the Federal Government; provincial government employees except where insured with the concurrence of the government of the province; certified permanent employees of municipal or public authorities; private domestic service; private-duty nursing; teaching; certain director-officers of corporations; workers on other than an hourly, daily or piece rate, earning more than \$4,800 a year, unless they elect to continue as insured persons; employees in a charitable institution or in a hospital not carried on for purpose of gain except where the institution or hospital consents to insure certain groups or classes of persons with the concurrence of the Commission. All persons paid by the hour, day, or at a piece rate (including a mileage rate) are insured regardless of amount of earnings, together with all employees who receive \$4,800 or less at weekly, monthly, yearly or commission rates.

Unemployment Insurance Fund.—Employers and employees contribute to the Unemployment Insurance Fund, the amounts paid by each group being equal. The Federal Government contributes an amount equal to one-fifth of the combined employer-employee contributions and assumes the cost of administration. From July 1, 1941 to Mar. 31, 1957 employers and employees contributed \$1,950,260,488 to the Fund and the Federal Government added \$390,053,679. Interest and profit on the sale of securities amounting to \$246,910,437 and fines of \$340,830 made a total revenue of \$2,587,565,435.

Benefits first became payable on Jan. 27, 1942, and from that date to Mar. 31, 1957 total benefit payments amounted to \$1,843,365,310, leaving a balance of \$744,200,125 in the Fund. Revenues of the Fund are invested in Government of Canada and Canadian National Railway bonds with a par value of \$743,551,500 as at Mar. 31, 1958.

WEEKLY RATES OF CONTRIBUTION AND BENEFIT UNDER THE UNEMPLOYMENT INSURANCE ACT, EFFECTIVE OCT. 2, 1955

Range of Earnings	Weekly Contributions ¹		Value of Weekly Stamp ²	Range of Average Weekly Contributions	Weekly Rate of Benefit ³	
	Employer	Employee			Person Without Dependant	Person With Dependant
	cts.	cts.	cts.	cts.	\$	\$
Less than \$ 9.00 ⁴	8	8	16	Less than 20.....	6	8
\$ 9.00 to \$14.99.....	16	16	32	20 and under 27.....	9	12
\$15.00 to \$20.99.....	24	24	48	27 " " 33.....	11	15
\$21.00 to \$26.99.....	30	30	60	33 " " 39.....	13	18
\$27.00 to \$32.99.....	36	36	72	39 " " 45.....	15	21
\$33.00 to \$38.99.....	42	42	84	45 " " 50.....	17	24
\$39.00 to \$44.99.....	48	48	96	50 " " 54.....	19	26
\$45.00 to \$50.99.....	52	52	1.04	54 " " 58.....	21	28
\$51.00 to \$56.99.....	56	56	1.12	58 to 60.....	23	30
\$57.00 or over.....	60	60	1.20			

¹ The weekly contribution is based on actual earnings in the week irrespective of the number of days in which the earnings are obtained.

² Unemployment insurance stamps combine both employer and employee contributions.

³ Regular benefit rates calculated on the average weekly contributions for the last 30 weeks in the 104 weeks preceding claim. Since Oct. 2, 1955, a claimant, to justify for benefit, must have at least 30 weekly contributions in the last 104 weeks prior to claim; eight weekly contributions since the start of the last preceding regular benefit period or in the last year prior to claim, whichever is the shorter period; and 24 weekly contributions since the start of the last preceding benefit period, or in the year prior to the claim, whichever is the longer period.

⁴ Employees earning less than \$9 in a week receive one-half of a 32-cent stamp (8 cents from the employer and 8 cents from the employee).

The duration of regular benefit is related to the contribution history—one week's benefit for every two weeks' contributions in the past 104 weeks with a maximum of 36 weeks. The rate of benefit is determined by the average of the contributions in the past 30 weeks. No benefit is payable in a benefit period until a claimant has served a waiting period equivalent to one full week's benefit.

Disqualifications for benefit include: loss of work owing to a labour dispute in which the contributor is participating or directly interested; unwillingness to accept suitable employment; being an inmate of any prison or any institution supported out of public funds; refusal to attend a course of instruction or training if directed to do so; residence outside Canada unless otherwise prescribed. Disqualification of a claimant for a period not exceeding six weeks may be imposed if an employee is discharged by reason of his own misconduct or leaves the employment voluntarily without just cause or refuses suitable employment.

Seasonal benefit is payable in the period Dec. 1 to mid-May to certain claimants whose benefits have been exhausted or who have insufficient contributions to qualify for regular benefit. Prior to 1958 the period was Jan. 1 to mid-April. A temporary extension of six weeks to the seasonal benefit period was made in 1958.

Statistics of Unemployment Insurance.*—Detailed statistics on unemployment insurance, collected for administration purposes, also provide information of general interest on employment and unemployment and on financial aspects of the scheme. Table 25 shows, for 1957 and 1958, the number of claims received each month in local offices of the Unemployment Insurance Commission, the number of active claimants at each month-end, the average weekly number of beneficiaries each month and total benefits paid. The number of claims received shows the volume of new cases of recorded unemployment among insured persons, while the number of active claimants at month-end indicates recorded unemployment at a given time. Initial and renewal claims filed in 1958 increased by 407,307 from the previous year to a total of 2,780,542. The month-end count of active claimants, who were either applying for or receiving benefit, averaged 380,178 in 1957 and 551,508 in 1958. The average weekly number of beneficiaries in the peak month of March was 498,300 in 1957 and 802,200 in 1958. The difference between the 1957 and 1958 levels of beneficiaries narrowed to 2,100 by December. Benefits paid rose from \$305,000,000 in 1957 to some \$493,000,000 in 1958.

* Statistics of unemployment insurance are compiled and published by the Unemployment Insurance Section, Labour Division, Dominion Bureau of Statistics, from material supplied by the Unemployment Insurance Commission. More detailed analysis of these data is available in DBS publication *Annual Report on Benefit Periods Established and Terminated under the Unemployment Insurance Act* (Catalogue No. 73-201) and monthly *Statistical Report on the Operations of the Unemployment Insurance Act* (Catalogue No. 73-001).

25.—Claims Filed, Active Claimants, Beneficiaries, and Amount Paid, by Month, 1957 and 1958

Month	1957				1958			
	Initial and Renewal Claims Filed	Active Claim- ants, End of Month	Bene- ficiaries, Weekly Average	Amount Paid	Initial and Renewal Claims Filed	Active Claim- ants, End of Month	Bene- ficiaries, Weekly Average	Amount Paid
	No.	No.	No.	\$	No.	No.	No.	\$
January.....	361,055	545,981	365,000	33,439,112	367,382	834,544	639,800	60,759,645
February.....	192,665	572,387	457,800	38,603,408	243,907	899,349	735,700	63,307,658
March.....	195,224	558,811	498,300	44,125,523	253,338	859,639	802,200	72,382,046
April.....	163,510	373,609	477,900	40,392,557	217,500	722,252	735,200	66,679,377
May.....	104,326	250,283	313,300	26,269,582	165,075 ¹	551,103	582,800	51,652,555
June.....	86,419	204,616	177,300	14,356,036	155,754 ²	445,487	425,100	36,992,241
July.....	114,107	205,779	155,800	13,799,832	167,402	300,826	294,800	26,815,103
August.....	115,287	208,708	155,100	13,033,311	139,690	294,587	223,200	19,491,443
September.....	124,949	226,630	166,000	13,809,589	157,556	282,587	224,000	19,854,067
October.....	167,363	268,005	177,500	16,331,548	191,215	323,530	220,700	20,273,443
November.....	249,108	403,273	227,400	18,989,040	246,568	419,233	262,500	21,134,688
December.....	499,213	744,248	369,000	31,926,951	475,155	714,954	371,100	33,558,826
Totals.....	2,373,235	380,178	295,033	305,076,489	2,780,542	551,508	459,758	492,901,092

In addition to the monthly data published on the operation of the Unemployment Insurance Act, annual tabulations are published of the persons employed in insurable employment and of benefit periods established and terminated. The data on the insured population in Table 26 were obtained from returns from the renewal of insurance books and contribution cards at May 1, 1957 and June 1, 1958. Included are persons contributing in insurable employment on those dates and persons on claim. The number insured at June 1, 1958 increased by 247,770 from the previous book renewal to 4,055,090. Unemployment insurance was extended to fishermen on Apr. 1, 1957. This coverage change is interesting since the majority of commercial fishermen in Canada are not wage-earners but sharmen or lone workers. It was decided to treat as the 'employer' the person who first acquires the catch from the person who does the actual fishing. In some instances this is his actual employer, in others it is the buyer of the catch, and in still others it is the person or organization that markets the catch for the fisherman or makes contributions to the Fund. Fishermen were not considered for benefit until the 1957-58 seasonal benefit period.

26.—Persons Insured under the Unemployment Insurance Act, by Industrial Group and Sex, 1957 and 1958

NOTE.—Based on a 10-p.c. sample of contributors and claimants at May 1, 1957 and June 1, 1958.

Industry	1957		1958	
	Males	Females	Males	Females
	No.	No.	No.	No.
Agriculture	6,080	1,380	6,530	900
Forestry and Logging	78,750	2,210	67,390	1,820
Fishing, Hunting and Trapping	10,620	200	7,890	120
Mining, Quarrying and Oil Wells	98,750	3,870	105,180	4,530
Metal mining.....	57,090	1,570	62,770	1,690
Fuels.....	25,760	1,360	24,770	1,430
Non-metal mining.....	8,900	180	9,210	260
Quarrying, clay and sand pits.....	3,800	50	4,580	140
Prospecting.....	3,200	710	3,850	1,010
Manufacturing	982,970	303,320	979,040	309,360
Foods and beverages.....	117,110	43,520	130,030	47,560
Tobacco and tobacco products.....	3,520	5,290	3,910	5,670
Rubber products.....	15,160	4,640	14,550	4,770
Leather products.....	17,110	14,250	17,360	13,830
Textile products (except clothing).....	39,060	23,430	38,460	22,590
Clothing (textile and fur).....	32,780	75,820	30,190	74,430
Wood products.....	95,830	9,090	100,940	9,670
Paper products.....	75,070	13,580	79,040	13,320
Printing, publishing and allied industries.....	41,120	18,900	43,630	20,230
Iron and steel products.....	183,350	19,810	167,320	19,460
Transportation equipment.....	153,180	12,970	147,400	13,250
Non-ferrous metal products.....	52,460	7,690	49,180	7,480
Electrical apparatus and supplies.....	56,200	23,730	51,460	24,180
Non-metallic mineral products.....	32,890	3,950	34,930	4,180
Products of petroleum and coal.....	10,390	1,080	11,090	1,260
Chemical products.....	39,900	14,420	39,630	14,030
Miscellaneous manufacturing.....	17,840	11,150	20,120	13,450
Construction	309,070	9,270	316,150	8,920
General contractors.....	207,840	5,250	205,390	4,790
Subcontractors.....	101,230	4,020	110,760	4,130
Transportation, Storage and Communication	322,530	61,940	326,810	63,580
Transportation.....	283,790	19,840	287,830	21,200
Storage.....	13,860	1,870	13,420	1,770
Communication.....	24,880	40,230	25,560	40,610
Public Utility Operation	38,330	6,630	40,070	7,030
Trade	332,790	250,160	420,070	261,610
Wholesale.....	133,840	48,160	140,460	47,960
Retail.....	258,950	202,000	279,610	213,650

26.—Persons Insured under the Unemployment Insurance Act, by Industrial Group and Sex, 1957 and 1958—concluded

Industry	1957		1958	
	Males	Females	Males	Females
	No.	No.	No.	No.
Finance, Insurance and Real Estate	49,550	92,120	53,590	99,590
Service	268,940	209,490	298,440	227,270
Community	20,470	25,050	24,480	30,900
Government	113,440	35,050	128,450	35,930
Recreation	13,530	7,380	14,620	7,590
Business	34,330	33,580	37,790	35,220
Personal	87,170	108,430	93,100	117,630
Unspecified	11,750	4,290	8,610	2,550
Claimants	219,130	73,180	310,290	127,750
Totals, All Industries	2,789,260	1,018,060	2,940,060	1,115,030

Table 27 distributes by province persons establishing regular benefit periods, regular benefit periods terminated, average weeks paid and average dollar benefit paid on these terminations. A claimant establishes a *regular benefit period* when he submits his claim in the prescribed manner and proves he has fulfilled the minimum contribution requirements. The duration of benefit authorized, the weekly rate authorized and total entitlement are then calculated and the claimant's benefit may be drawn upon during successive intervals of unemployment. His benefit period terminates when either he has exhausted the amount authorized or when 12 months have elapsed since he established, whichever comes first. The number establishing benefit periods in 1958 increased by 5,312 from 1,086,172 to 1,091,484. The duration of paid benefit in 1958 averaged 14.3 weeks, compared with 12.0 weeks in 1957. Ordinary benefit paid averaged \$313.87 on terminations in 1958, up from \$256.26 on terminations in 1957.

27.—Persons Establishing Regular Benefit Periods, Benefit Periods Terminated, and Duration and Amount of Benefit Paid, by Province, 1957 and 1958

NOTE.—Based on a 25-p.c. sample.

Province	1957				1958			
	Persons Establishing Benefit Periods	Benefit Periods Terminated	Average Weeks Paid on Termination	Average Amount Paid on Termination	Persons Establishing Benefit Periods	Benefit Periods Terminated	Average Weeks Paid on Termination	Average Amount Paid on Termination
	No.	No.	No.	\$	No.	No.	No.	\$
Newfoundland	25,704	25,736	15.50	356.97	25,208	26,056	16.40	375.77
Prince Edward Island	4,864	4,696	16.12	304.92	4,476	4,848	15.61	302.67
Nova Scotia	43,732	41,484	12.86	258.99	49,228	45,700	15.03	309.30
New Brunswick	44,116	41,312	14.16	299.01	38,336	45,236	15.83	340.52
Quebec	340,944	287,392	12.46	263.71	337,560	356,400	14.70	318.23
Ontario	373,192	281,820	11.40	242.35	390,824	384,228	13.87	305.19
Manitoba	41,924	40,016	11.63	239.40	41,688	42,240	14.19	299.59
Saskatchewan	26,812	25,140	11.75	250.79	27,536	26,976	14.36	310.88
Alberta	53,762	45,932	9.89	221.01	55,040	54,140	12.76	287.44
British Columbia	131,132	96,688	11.31	251.22	121,588	135,924	14.01	323.76
Totals	1,086,172	890,216	12.02	256.26	1,091,484	1,121,748	14.31	313.87

Table 28 gives ordinary benefit periods terminated and average weeks paid classified by the age of the claimant and by his occupational attachment.

28. Regular Benefit Periods Terminated and Duration of Benefit Paid, classified by Age of Claimant and Occupation, 1957 and 1958

NOTE.—Based on a 25-p.c. sample.

Age Group or Occupation	1957		1958	
	Benefit Periods Terminated	Average Weeks Paid on Termination	Benefit Periods Terminated	Average Weeks Paid on Termination
	No.	No.	No.	No.
Age Group				
Under 20 years.....	36,372	10.93	52,576	13.50
20 — 24 “.....	143,600	10.77	197,536	13.68
25 — 34 “.....	249,576	10.98	324,348	13.54
35 — 44 “.....	180,836	11.23	223,988	13.63
45 — 54 “.....	139,836	12.10	167,856	14.30
55 — 64 “.....	86,108	13.61	96,636	15.84
65 or over.....	45,892	22.44	49,856	22.98
Unspecified.....	7,996	10.69	8,952	13.80
Totals.....	890,216	12.02	1,121,748	14.31
Occupation				
Managerial.....	6,456	14.78	8,220	16.02
Professional.....	5,728	13.01	9,484	15.23
Clerical.....	69,124	12.88	91,628	16.17
Transportation.....	103,188	10.50	109,088	14.20
Communication.....	6,876	13.21	8,100	18.64
Commercial.....	45,136	13.92	56,284	15.75
Financial.....	572	9.63	772	14.02
Service.....	71,516	14.91	84,100	16.93
Personal.....	34,368	14.44	39,512	16.75
Domestic.....	26,152	14.66	31,400	16.34
Protective.....	9,772	17.31	11,676	19.40
Other.....	1,240	14.66	1,512	16.02
Agricultural.....	4,312	14.29	6,868	15.16
Fishing, trapping and logging.....	59,028	12.70	66,660	14.56
Fishing and trapping.....	772	13.31	1,680	16.62
Logging.....	58,256	12.69	64,980	14.51
Mining.....	18,272	9.93	22,280	13.28
Manufacturing and mechanical.....	178,144	10.44	245,148	12.72
Electric light and power.....	12,324	12.47	16,724	14.26
Construction.....	111,652	11.87	143,300	13.88
Labourers.....	186,136	12.34	239,924	14.34
Unspecified.....	11,752	11.41	13,168	14.77

Table 29 gives the provincial distribution of persons establishing seasonal benefit periods in 1957 and 1958, average weeks paid and average benefits paid. Newfoundland claimants in 1958 averaged the largest duration of paid seasonal benefit but ranked below Prince Edward Island in 1957. Again, Newfoundland claimants averaged the highest paid benefit. The average duration of paid seasonal benefit was 7.08 weeks in 1957 and 11.20 weeks in 1958; the average benefit in 1957 amounted to \$141.86 in 1957 and \$233.37 in 1958.

29.—Persons Establishing Seasonal Benefit Periods, Duration of Benefit and Amount Paid, by Province, 1957 and 1958

NOTE.—Based on a 25-p.c. sample in 1957 and a 10-p.c. sample in 1958.

Province	1957 ¹			1958 ²		
	Persons Establishing Benefit Periods	Average Weeks Paid	Average Amount Paid	Persons Establishing Benefit Periods	Average Weeks Paid	Average Amount Paid
	No.	No.	\$	No.	No.	\$
Newfoundland.....	11,728	7.78	175.35	28,280	13.59	287.19
Prince Edward Island.....	2,460	7.88	136.74	5,390	12.90	251.98
Nova Scotia.....	10,284	7.65	140.02	27,060	11.99	235.83
New Brunswick.....	15,316	7.71	150.98	32,980	11.97	248.51
Quebec.....	69,828	6.98	140.71	152,840	10.94	228.14
Ontario.....	53,696	6.92	135.13	123,450	10.90	223.90
Manitoba.....	9,644	7.58	149.06	18,480	10.59	217.33
Saskatchewan.....	7,712	7.26	150.53	13,950	10.76	226.26
Alberta.....	8,540	6.31	135.07	17,850	9.99	215.41
British Columbia.....	19,576	6.62	134.79	50,210	11.04	243.54
Totals.....	208,784	7.08	141.86	470,490	11.20	233.37

¹ Jan. 1 to Apr. 20.

² Dec. 1, 1957 to June 28, 1958.

Employment Service.—The Unemployment Insurance Commission operates a free employment service under authority of the Unemployment Insurance Act, 1940. The public employment offices, which had functioned under a joint federal-provincial arrangement for more than two decades, were taken over by the Commission on Aug. 1, 1941, and additional offices were established in all provinces except Quebec. The Commission established its own offices in Quebec and the provincial government thereupon reduced the number of its offices.

30.—Applications for Employment, Positions Offered and Placements Effected by Employment Offices 1949-58, and by Province, 1957 and 1958

NOTE.—Figures by provinces from 1920-56 are given in the corresponding table of previous Year Books beginning with the 1926 edition. Totals for 1920-37 are given in the 1938 edition, p. 766; for 1938 in the 1939 edition, p. 802; and for 1939-48 in the 1951 edition, p. 686.

Year and Province	Applications Registered		Vacancies Notified		Placements Effected	
	Males	Females	Males	Females	Males	Females
	No.	No.	No.	No.	No.	No.
1949.....	1,295,690	494,956	652,853	373,837	464,363	219,816
1950.....	1,500,763	575,813	800,611	363,711	559,882	230,920
1951.....	1,541,208	623,467	943,773	387,795	655,933	262,305
1952.....	1,781,689	664,485	865,152	444,926	677,777	302,730
1953.....	1,980,918	754,358	822,852	466,310	661,167	332,239
1954.....	2,129,110	840,877	665,029	423,291	545,452	316,136
1955.....	2,161,081	829,741	797,917	435,056	642,726	310,850
1956.....	2,182,904	809,277	986,653	438,967	748,464	298,515
1957.....	2,714,759	938,704	720,798	398,740	586,780	290,924
1958.....	2,790,412	1,012,974	620,394	374,245	548,663	291,466
Newfoundland.....	1957 65,575	4,271	5,930	893	3,494	557
.....	1958 70,759	5,621	3,378	1,159	2,353	747
Prince Edward Island.....	1957 13,390	4,319	4,776	2,464	3,434	1,911
.....	1958 15,349	4,820	5,403	2,385	4,302	2,029
Nova Scotia.....	1957 94,988	25,156	20,983	9,968	17,939	7,403
.....	1958 100,722	27,227	18,064	9,128	17,082	7,074
New Brunswick.....	1957 115,074	26,148	19,005	9,273	17,612	7,062
.....	1958 108,970	27,684	16,966	7,953	16,599	6,199

30.—Applications for Employment, Positions Offered and Placements Effected by Employment Offices 1949-58, and by Province, 1957 and 1958—concluded

Year and Province	Applications Registered		Vacancies Notified		Placements Effected	
	Males	Females	Males	Females	Males	Females
	No.	No.	No.	No.	No.	No.
Quebec.....1957	740,606	221,855	190,919	96,108	148,569	66,766
.....1958	747,771	251,423	148,358	84,616	132,237	66,149
Ontario.....1957	948,018	372,783	269,687	139,023	226,199	103,540
.....1958	1,006,625	386,594	233,348	127,003	206,905	98,131
Manitoba.....1957	126,889	56,417	40,954	24,460	32,982	18,151
.....1958	124,209	58,538	39,941	24,727	34,277	19,175
Saskatchewan.....1957	86,931	33,652	32,759	17,082	25,569	11,554
.....1958	85,185	35,423	27,551	15,098	24,697	11,139
Alberta.....1957	166,996	63,209	60,157	39,012	47,439	25,827
.....1958	165,602	65,301	58,954	35,652	48,193	23,770
British Columbia.....1957	356,292	130,894	75,628	60,457	63,543	48,153
.....1958	365,220	150,343	68,431	66,524	62,018	57,053

Section 6.—Vocational Training*

The federal Department of Labour, under the authorization of the Vocational Training Co-ordination Act 1942, co-operates with the provinces in promoting and developing vocational training in Canada by sharing with the provincial governments the costs of establishing and operating various types of schools and training programs designed to fit trainees for employment.

The federal-provincial program under which all classes and training projects are operated is known as 'Canadian Vocational Training'. In conducting this program, the Minister of Labour receives advice and co-operation from the Vocational Training Advisory Council which consists of representatives of provincial governments, employers, organized labour and other bodies concerned with vocational training in Canada. Problems regarding apprenticeship, including federal participation therein, are referred to the Apprenticeship Training Advisory Committee which reports to the Minister through the Council.

The established procedure is to have all training programs operated by or under the supervision of the appropriate provincial authority and to reimburse the provinces for provincial government expenditures in connection with such projects. Where classes or training programs are operated for Federal Government departments, the Armed Forces, or other federal agencies, the provinces are reimbursed for the full costs; otherwise they are reimbursed for one-half of such expenditures subject to the limitation of funds voted for such purpose by Parliament.

There are three federal-provincial agreements governing the nature and extent of the sharable expenditures for different types of training: the Vocational and Technical Training Agreement No. 2, the Apprenticeship Training Agreement, and the Special Vocational Training Projects Agreement.

Vocational and Technical Training Agreement.—This Agreement which provides for the expenditure, over the five-year period that began Apr. 1, 1957, of \$40,000,000 of Federal Government assistance to the provinces in the building, equipping and operating of vocational and technical schools, institutes and training centres, was signed by all

* More detailed information is given in the annual report *Canadian Vocational Training Branch*, published as a supplement to the annual report of the Department of Labour.

provinces except Quebec. Of this amount, \$25,000,000 is provided exclusively for assistance on capital projects, with preference being given to trade and technical institutes although approved vocational high schools are also eligible to share. This capital appropriation is allotted to the provinces on the basis of population in the 15-19 age group. The remaining \$15,000,000 is distributed by way of annual allotments to the provinces for sharing in operating costs of similar institutes and schools or, if desired, a province may claim as much as half of its annual allotment against capital costs of such institutions. The Agreement provides for annual allotments totalling \$2,500,000 in each of the first two years of operation, \$3,000,000 in the third year, and \$3,500,000 in both the fourth and the fifth years. The annual allotments consist of initial allotments of \$30,000 to each province and \$20,000 to each of the Yukon and Northwest Territories, the remainder being allotted on the basis of population in the 15-19 age group. Federal expenditure under this Agreement for the year ended Mar. 31, 1959 was \$4,795,722.

Apprenticeship Training.—Apprenticeship agreements covering a ten-year period commencing Apr. 1, 1944 were signed by all provinces except Quebec and Prince Edward Island. Newfoundland signed an agreement in 1950 for the remainder of the 1944-54 period. These agreements were renewed for a further ten-year period expiring on Mar. 31, 1964. They provide for sharing, on a 50-50 basis, in provincial government expenditures on the training of indentured apprentices who are registered with the provincial Departments of Labour under the provisions of the apprenticeship Act of each province. Training is provided on the job and in specially organized classes which may be conducted on a full-time basis during the day or as part-time day or evening classes. As of Mar. 31, 1959, a total of 18,567 apprentices had been registered. Federal Government expenditures for this purpose for the year ended Mar. 31, 1959, were as follows:—

Province	Payment	Province	Payment
	\$		\$
Newfoundland.....	46,054	Alberta.....	391,005
Nova Scotia.....	82,332	British Columbia.....	362,165
New Brunswick.....	71,927	Northwest Territories.....	304
Ontario.....	519,512		
Manitoba.....	76,347	TOTAL.....	1,674,591
Saskatchewan.....	124,946		

Special Vocational Training Projects.—Agreements have been in operation since 1939 which provide for sharing with the provinces the costs of various types of training projects, other than those regularly conducted in schools assisted under the provisions of the Vocational and Technical Training Agreement No. 2 and programs of Apprenticeship Training. These Agreements are now consolidated under the Special Vocational Training Projects Agreement, effective from Apr. 1, 1959 until Mar. 31, 1964, except that the provision for sharing the costs of financial assistance to university students and nurses-in-training is subject to renewal on a year-to-year basis. The conditions governing financial assistance to the various types of projects are set forth in schedules attached to and forming part of the Agreement. These schedules cover special training classes for members of the Armed Forces and training programs arranged by the provinces for employees of the Federal Government departments, the costs of which are borne entirely by the federal treasury. In addition, the costs of the following types of classes are shared equally by the federal and provincial governments: training for unemployed persons who require such training to fit them for employment; rehabilitation training for disabled persons; short-term classes for employment in primary industries; training programs for supervisors in industrial establishments; and preparation, printing and revision of vocational correspondence courses made available by the provinces to students anywhere in Canada on the same terms as to students in the province where the course has been prepared. In the year ended Mar. 31, 1959, federal expenditures of \$1,183,352 were made towards programs now covered by the Special Vocational Training Projects Agreement.

Section 7.—Industrial Accidents and Workmen's Compensation

Subsection 1.—Fatal Industrial Accidents

Statistics of fatal industrial accidents have been compiled by the federal Department of Labour since 1903. The data are now obtained from provincial Workmen's Compensation Boards, the Board of Transport Commissioners and other government authorities, from departmental correspondents and from press reports.

31.—Fatal Industrial Accidents, by Industry, 1955-58

Industry	Numbers				Percentages of Total			
	1955	1956	1957	1958	1955	1956	1957	1958
Agriculture.....	88	108	92	97	6.6	7.3	6.6	7.6
Logging.....	183	197	141	129	13.8	13.5	10.2	10.2
Fishing and trapping.....	32	18	23	38	2.4	1.2	1.7	3.0
Mining, non-ferrous smelting and quarrying.....	179	250	185	231	13.5	17.0	13.3	18.2
Manufacturing.....	219	200	209	166	16.5	13.7	15.1	13.1
Construction.....	243	312	340	281	18.3	21.4	24.5	22.1
Electricity, gas and water production and supply.....	42	30	42	31	3.2	2.0	3.0	2.4
Transportation, storage and communication.....	211	228	207	163	15.9	15.6	14.9	12.8
Trade.....	50	56	66	40	3.8	3.8	4.8	3.2
Finance.....	5	1	2	4	0.4	0.1	0.1	0.3
Service.....	74	64	80	80	5.6	4.4	5.8	7.0
Totals.....	1,326	1,462	1,387	1,269	100.0	100.0	100.0	100.0

Causes of Industrial Fatalities.—During 1958, of the 1,269 fatal accidents to industrial workers, 309 were the result of the victims being struck by objects: 54 by falling trees and limbs, 37 by objects falling or flying in mines and quarries, 32 by automobiles or trucks, 23 by tractors, loadmobiles, etc., 23 by objects being hoisted or conveyed, and 21 by landslides or cave-ins. Collisions, derailments, wrecks, etc., were responsible for 308 industrial fatalities; automobiles and trucks were involved in 151 of these fatalities; tractors and loadmobiles in 65; watercraft in 56; and aircraft in 21. Falls and slips were responsible for 224 industrial deaths, of which 215 were falls to different levels, including 51 deaths caused by falls into rivers, lakes, seas or harbours, 33 by falls from buildings, roofs or towers, and 32 by miscellaneous falls to different levels. Conflagrations, explosions and exposure to hot substances caused 145 industrial fatalities. There were 89 deaths caused by exposure to dust, poisonous gases and poisonous substances. Contact with electric current was responsible for 72 fatalities and 26 were caused by over-exertion, strain, etc.

Subsection 2.—Workmen's Compensation*

In all provinces legislation is in force providing for compensation for injury to a workman by accident arising out of and in the course of employment, or for disablement caused by a specified industrial disease, except where the workman is disabled for fewer than a stated number of days. The Acts of all provinces provide for a compulsory system of collective liability on the part of employers. To ensure payment of compensation each Act provides for an accident fund, administered by the province, to which employers are required to contribute at a rate determined by the Workmen's Compensation Board in accordance with the hazards of the industry. A workman to whom these provisions apply has no right of action against his employer for injury from an accident during employment. In Ontario and Quebec, public authorities, railway and shipping companies, and telephone and telegraph companies are individually liable for compensation as determined

* More detailed information is given in the Department of Labour publication *Workmen's Compensation in Canada, A Comparison of Provincial Laws*.

by the Board and pay a proportion of the expenses of administration. A federal Act provides for compensation for accidents to Federal Government employees according to the conditions laid down by the Act of the province in which the employee is usually employed. Seamen who are not under a provincial Workmen's Compensation Act are entitled to compensation under the Merchant Seamen Compensation Act.

In all provinces, free medical aid is given to workmen during disability. Compensation is payable in all provinces for anthrax and for poisoning from arsenic, lead, mercury and phosphorus, and silicosis is compensated under certain conditions. Other diseases compensated vary according to the industries of the provinces.

Scope of the Workmen's Compensation Acts.—The Acts vary in scope but in general they cover construction, mining, manufacturing, lumbering, transportation and communication and the operation of public utilities. Undertakings in which not more than a stated number of workmen are usually employed may be excluded, except in Alberta and British Columbia.

Benefits.—Each Act provides for a waiting period, i.e., a minimum period of time during which a workman must be disabled from earning full wages in order to qualify for compensation. In Manitoba, Saskatchewan and Alberta the waiting period is one day. Compensation is not payable when a workman is off work only for the day on which the accident occurs but if he is disabled for a longer time compensation begins from the day following the accident. The waiting period in British Columbia is three days, in Newfoundland, Prince Edward Island, Nova Scotia and New Brunswick four days, and in Quebec and Ontario five days. Where a disability continues beyond the waiting period, compensation is payable from the date of the accident. The waiting period does not restrict the right of the workman to medical aid which, under all the Acts, is given from the date of the accident.

Burial expenses are paid to the amount of \$400 in Quebec, \$300 in New Brunswick and Ontario, \$250 in Nova Scotia, Saskatchewan and British Columbia, and \$200 in Newfoundland, Prince Edward Island, Manitoba and Alberta. In all provinces except Prince Edward Island and Nova Scotia an additional sum is allowed for transporting the workman's body.

A widow or invalid widower or a foster mother with children under the age limit receives a monthly payment of \$90 in British Columbia, \$75 in Quebec, Ontario, Manitoba and Saskatchewan, \$60 in Newfoundland, Nova Scotia and Alberta, and \$50 in Prince Edward Island and New Brunswick. In addition, a lump sum of \$300 is paid in Quebec, Ontario, Manitoba and Saskatchewan, \$250 in British Columbia, \$200 in Prince Edward Island, \$150 in Nova Scotia and Alberta, and \$100 in Newfoundland and New Brunswick.

For each child in the care of a parent or foster mother receiving compensation a monthly payment of \$35 is made in Manitoba, Saskatchewan and British Columbia, \$30 in Alberta, \$25 in Quebec and Ontario, \$22.50 in Nova Scotia, and \$20 in Newfoundland, Prince Edward Island and New Brunswick.

For each orphan child a monthly payment of \$45 is made in Manitoba and Saskatchewan, \$40 in New Brunswick and British Columbia, \$35 in Quebec and Ontario, and \$30 in Newfoundland, Prince Edward Island, Nova Scotia and Alberta. In Alberta, a further amount, not exceeding \$10 a month, may be given at the discretion of the Board, and the maximum allowance payable to a family of orphans is \$120 in Prince Edward Island and \$150 in Nova Scotia. In Saskatchewan, the Board may in its discretion make a lump sum payment, not exceeding \$50, to an orphan child.

Invalids excepted, payments to children are not continued beyond the age of 16 years in seven of the provinces but the Board has discretion to pay compensation to the age of 18 (19 in Saskatchewan) if it is considered desirable for a child to continue his education. In Quebec, the age limit is 18 years, and in New Brunswick and British Columbia compensation is paid to the age of 18 if a child is attending school regularly.

In Newfoundland, Prince Edward Island and Alberta, payments are made to invalid children only for the length of time the Board considers that the workman would have contributed to their support. In the other provinces payments are continued until recovery.

All the Acts provide that where the only dependants are persons other than consort or children compensation is to be a reasonable sum proportionate to the pecuniary loss but the total monthly amount to be paid to all such dependants is limited to \$100 in Ontario, \$90 in British Columbia, \$85 in Alberta, and \$60 in Prince Edward Island, Nova Scotia and Manitoba. In British Columbia, if a workman leaves dependent parents as well as a widow or orphans, the maximum payable to a parent or parents is \$90 a month. Compensation to dependants, other than consort or children, is continued only for such time as the Board considers that the workman would have contributed to their support.

Except in Alberta and British Columbia, each Act places a maximum on the total amount of benefits payable to dependants if the workman dies. A maximum is placed on the amounts that may be paid to the widow and children and to orphan children in Prince Edward Island and Nova Scotia; in Prince Edward Island the maximum is \$170 to a widow and children and \$120 to orphan children, and in Nova Scotia the corresponding amounts are \$172.50 and \$150. The maximum to all dependants is 75 p.c. of the workman's earnings in Newfoundland, Prince Edward Island, New Brunswick, Quebec and Manitoba. In Ontario and Saskatchewan, the average earnings of the workman are the maximum amount payable.

Irrespective of the workman's earnings, however, compensation may not fall below certain minimum monthly amounts. The minimum payable to a consort and one child in Quebec is \$100 a month, to a consort and two children \$125, and to a consort and more than two children \$150; in Manitoba, the minimum is \$110 if there is a consort and one child and \$145 if there is more than one child; in Saskatchewan, the minimum is \$100 a month to a consort and one child and \$125 to a consort and two children plus \$15 a month for each additional child. In Newfoundland, a widow must receive at least \$60 a month with a further payment of \$20 a month for each child under 16 unless the total exceeds \$130. In Ontario, the minimum payable to a widow is \$75 a month with a further payment of \$25 for each child up to but not exceeding \$150 a month.

Compensation for total disablement in all provinces is a periodical payment for the duration of the disability equal to 75 p.c. of average earnings. Except in New Brunswick, the Acts fix minimum sums to be paid for a permanent total disability. The minimum is \$15 a week in Prince Edward Island and Quebec, \$25 in Manitoba, Alberta and British Columbia, and \$30 a week in Saskatchewan. In Newfoundland, the minimum is \$65 a month, and in Nova Scotia and Ontario \$100 a month. If average earnings are less than the minimum amount allowed, the amount of the earnings is paid in all provinces except Nova Scotia and Saskatchewan. For partial disablement, compensation is either 75 p.c. of the difference in earnings before and after the accident or the amount is determined by the Board on the basis of impairment of earning capacity estimated from the nature of the injury. In the latter case the workman is entitled to the same fraction of 75 p.c. of earnings as his impairment is of his full earning capacity. In all provinces, if the impairment of earning capacity is 10 p.c. or less (5 p.c. or less in Alberta), a lump sum may be given.

The average earnings on which compensation is based are limited to \$5,000 a year in Quebec, Ontario, Saskatchewan and British Columbia, \$4,500 in Manitoba, \$4,000 in New Brunswick and Alberta, \$3,600 in Nova Scotia, and \$3,000 in Newfoundland and Prince Edward Island. If the workman's earnings at the time of accident are not considered a proper basis for compensation, the Board may use as a basis the average earnings of another person in the same grade of work. Compensation paid to a workman under 21 years of age may be raised later if it appears that his earning power would have increased had the injury not occurred.

Table 32 gives the number of industrial accidents reported by each of the provinces and the amount of compensation paid by the Workmen's Compensation Board in the years 1957 and 1958.

32.—Industrial Accidents Reported and Compensation Paid by Workmen's Compensation Boards, 1957 and 1958

Year and Province	Industrial Accidents Reported					Compensation Paid ²
	Medical Aid Only ¹	Temporary Disability	Permanent Disability	Fatal	Total	
	No.	No.	No.	No.	No.	\$
1957						
Newfoundland.....	4,876	3,743	32	7	8,658	1,295,982
Prince Edward Island.....	779	606	4	4	1,393	240,154
Nova Scotia.....	9,953	7,003	614	53	17,623	3,860,029
New Brunswick.....	6,783	7,700	202	26	14,711	1,763,355
Quebec.....	..	..	..	291	110,401	20,227,612 ³
Ontario.....	177,154	68,722	2,278	338	248,492	41,278,317 ³
Manitoba.....	12,608	5,650	226	30	18,414	2,726,355
Saskatchewan.....	11,191	9,386	174	52	20,803	4,232,477 ⁴
Alberta.....	25,808	20,236	784	105	46,933	8,073,879
British Columbia.....	48,738	25,620	1,322	191	75,871	19,721,758
Totals, 1957.....	...	...	...	1,097	563,299	103,424,918
1958						
Newfoundland.....	4,663	3,410	91	15	8,179	1,086,823
Prince Edward Island.....	843	616	6	3	1,468	176,417
Nova Scotia.....	8,961	6,075	651	110	15,797	3,776,259
New Brunswick.....	7,402	5,773	175	35	13,385	1,946,181
Quebec.....	..	..	..	206	95,868	20,653,387 ³
Ontario.....	161,355	64,441	2,440	303	228,539	44,691,164 ³
Manitoba.....	12,983	5,314	259	32	18,588	2,985,000
Saskatchewan.....	11,136	9,320	202	41	20,699	4,576,709 ⁴
Alberta.....	25,995	19,033	781	103	45,912	8,354,302
British Columbia.....	40,753	20,951	1,249	156	63,109	18,971,980
Totals, 1958.....	...	...	...	1,004	511,544	107,218,222

¹ Accidents requiring medical treatment but not causing disability for a sufficient period to qualify for compensation; the period varies in the several provinces. ² Includes, except where noted otherwise, payments to compensate loss earnings, medical aid payments, cost of rehabilitation and hospitalization (not including capital expenditures) and pensions paid (not pensions awarded) for temporary and permanent disabilities. ³ Excludes payments by employers who make direct compensation to their employees; such employees come under Schedule II of the Ontario and Quebec Workmen's Compensation Acts. ⁴ Excludes hospital and rehabilitation costs.

Section 8.—Organized Labour in Canada*

Close to 1,460,000 Canadian workers belonged to labour unions in 1959. Two central bodies—the Canadian Labour Congress and the Canadian and Catholic Confederation of Labour—continued to represent some 85 p.c. of organized labour, with most of the remainder distributed among organizations active on a regional, national or international level, but independent of a central labour congress. At the beginning of 1959 unions belonging to the Canadian Labour Congress had a total membership of 1,154,000, and the membership of the Canadian and Catholic Confederation of Labour was approximately 97,000.

More than two-thirds of the organized labour force in Canada belong to unions that operate on the international level. Ninety of the 110 international unions active in Canada in January 1959 were affiliates of the Canadian Labour Congress, and 84 of these were also within the American Federation of Labor and Congress of Industrial Organizations. Twelve of the remaining 20 international unions had no congress link in Canada, but were affiliated with the AFL-CIO. There were 51 national and regional unions in Canada at the beginning of 1959, 20 of them affiliated with the CLC and 13 with the CCLL.

* A special article on the History of the Labour Movement in Canada prepared by Dr. Eugene Forsey, Director of Research, Canadian Labour Congress, appears in the 1957-58 Year Book, pp. 795-806.

International, national and regional unions had together a membership of more than 1,381,000, distributed among 161 organizations ranging in size from eight members to the 80,000-member United Steelworkers of America. The United Brotherhood of Carpenters and Joiners of America retained its position as the second largest union in Canada with nearly 70,000 members, followed by the 60,000-member International Union, United Automobile, Aircraft and Agricultural Implement Workers of America. The National Union of Public Employees, with a membership of nearly 43,000, was the largest national union in Canada in 1959, surpassing the Canadian Brotherhood of Railway, Transport and General Workers, which was in first place in 1958.

The grand total of nearly 1,460,000 members reported by labour organizations in 1959 to the Canadian Department of Labour amounted to approximately 33 p.c. of the estimated total number of non-agricultural paid workers in Canada.

33.—Union Membership in Canada, 1930-59

Year	Members	Year	Members	Year	Members
	'000		'000		'000
1930.....	322	1940.....	362	1951 ¹	1,029
1931.....	311	1941.....	462	1952.....	1,146
1932.....	283	1942.....	578	1953.....	1,220
1933.....	286	1943.....	665	1954.....	1,268
1934.....	281	1944.....	724	1955.....	1,268
1935.....	281	1945.....	711	1956.....	1,352
1936.....	323	1946.....	832	1957.....	1,386
1937.....	383	1947.....	912	1958.....	1,454
1938.....	382	1948.....	978	1959.....	1,459 ²
1939.....	359	1949 ^{1,2}	1,006		

¹ Figures for years up to and including 1949 are as at Dec. 31; figures from 1951 are as at Jan. 1.

² Newfoundland is included from 1949.

³ Adjustment in coverage resulted in net addition of approximately 23,000 members for the first time.

34.—Union Membership, by Type of Union and Affiliation, as at Jan. 1, 1959

Type and Affiliation	Unions	Locals	Membership
	No.	No.	No.
International Unions.....	110	4,303	1,055,690
American Federation of Labor—Congress of Industrial Organizations/Canadian Labour Congress.....	84	3,854	897,110
Canadian Labour Congress only.....	6	118	59,079
American Federation of Labor—Congress of Industrial Organizations only.....	12	57	18,689
Unaffiliated Railway Brotherhoods.....	2	127	9,808
Other unaffiliated unions.....	6	147	70,994
National and Regional Unions.....	51	2,007	325,892
Canadian Labour Congress.....	20	1,345	162,604
Canadian and Catholic Confederation of Labour.....	13	399	89,693
Unaffiliated unions.....	18	263	73,595
Totals, International, National and Regional Unions.....	161	6,310	1,381,582
Directly Chartered Local Unions.....	348	348	42,362
Canadian Labour Congress.....	288	288	34,963
Canadian and Catholic Confederation of Labour.....	60	60	7,399
Independent Local Organizations.....	105	105	34,632
Grand Totals.....	614	6,763	1,458,576

35.—International, National and Regional Labour Unions Reporting 1,000 or more Members in Canada as at Jan. 1, 1959

Union	Membership in Canada
No.	
Amalgamated Association of Street, Electric Railway and Motor Coach Employees of America...	12,448
Amalgamated Clothing Workers of America.....	15,000
Amalgamated Lithographers of America.....	2,721
Amalgamated Meat Cutters and Butcher Workmen of North America.....	8,225
American Federation of Grain Millers	1,050
American Federation of Musicians of the United States and Canada.....	13,596
American Federation of Technical Engineers	1,024
American Newspaper Guild	2,837
Association of Radio and Television Employees of Canada.....	1,786
Bakery and Confectionery Workers' International Union of America.....	7,967
Boot and Shoe Workers' Union.....	1,056
Bricklayers, Masons and Plasterers' International Union of America.....	7,797
British Columbia Government Employees' Association	11,079
Brotherhood of Locomotive Engineers	9,086
Brotherhood of Locomotive Firemen and Enginemen	9,289
Brotherhood of Maintenance of Way Employees.....	20,000
Brotherhood of Painters, Decorators and Paperhangers of America.....	7,948
Brotherhood of Railroad Trainmen	22,573
Brotherhood of Railway and Steamship Clerks, Freight Handlers, Express and Station Em- ployees	21,069
Brotherhood of Railway Carmen of America.....	22,944
Building Service Employees' International Union.....	9,350
Canadian Brotherhood of Railway, Transport and General Workers.....	33,209
Canadian Council of Authors and Artists	2,516
Canadian Merchant Service Guild, Inc.....	2,397
Canadian Postal Employees Association.....	9,692
Canadian Seafood Workers' Union.....	1,710
Canadian Telephone Employees' Association.....	17,585
Canadian Textile Council.....	2,000
Civil Service Association of Alberta.....	8,661
Commercial Telegraphers' Union.....	5,328
Communications Workers of America.....	3,021
Distillery, Rectifying, Wine and Allied Workers' International Union of America.....	3,500
Federated Association of Letter Carriers	5,650
Fédération des Métiers de l' Imprimerie du Canada Enrg.....	4,807
Fédération des Travailleurs du Bâtiment du Canada.....	21,339
Fédération des Travailleurs du Bois Ouvré du Canada, Inc.....	4,003
Fédération Nationale Catholique des Employés du Commerce , Inc.....	3,262
Fédération Nationale Catholique des Services , Inc.....	6,850
Fédération Nationale Catholique du Textile , Inc.....	7,731
Fédération Nationale de la Métallurgie	13,000
Fédération Nationale des Employés de l' Industrie Minière , Inc.....	4,628
Fédération Nationale des Employés des Corporations Municipales et Scolaires du Canada, Inc.....	6,363
Fédération Nationale du Cuir et de la Chaussure du Canada, Inc.....	4,400
Fédération Nationale des Travailleurs de l' Industrie du Vêtement , Inc.....	5,500
Fédération Nationale des Travailleurs de la Pulpe et du Papier , Inc.....	7,500
Federation of Telephone Workers of British Columbia.....	5,469
Hotel and Restaurant Employees and Bartenders International Union.....	14,541
International Alliance of Theatrical Stage Employees and Moving Picture Machine Operators of the United States and Canada.....	1,561
International Association of Bridge, Structural and Ornamental Iron Workers.....	10,016
International Association of Fire Fighters	10,000
International Association of Heat and Frost Insulators and Asbestos Workers.....	1,177
International Association of Machinists	49,599
International Brotherhood of Boilermakers, Iron Shipbuilders, Blacksmiths, Forgers and Helpers	11,002
International Brotherhood of Bookbinders	3,384
International Brotherhood of Electrical Workers.....	30,922
International Brotherhood of Firemen and Oilers	2,100
International Brotherhood of Pulp, Sulphite and Paper Mill Workers.....	33,904
International Brotherhood of Teamsters, Chauffeurs, Warehousemen and Helpers of America.....	37,943
International Chemical Workers' Union.....	13,750
International Hod Carriers, Building and Common Laborers' Union of America.....	19,264
International Ladies' Garment Workers Union.....	15,096
International Leather Goods, Plastic and Novelty Workers Union.....	1,050
International Longshoremen's Association, Independent.....	6,500
International Longshoremen's and Warehousemen's Union.....	2,000
International Molders' and Foundry Workers' Union of North America.....	6,526
International Photo-engravers' Union of North America.....	1,006
International Printing Pressmen and Assistants' Union of North America.....	7,919
International Typographical Union.....	7,528
International Union of Electrical, Radio and Machine Workers.....	16,000

35.—International, National and Regional Labour Unions Reporting 1,000 or more Members in Canada as at Jan. 1, 1959—concluded

Union	Membership in Canada
No.	
International Union of Elevator Constructors	1,170
International Union of Mine, Mill and Smelter Workers	34,000
International Union of Operating Engineers	15,665
International Union, United Automobile, Aircraft and Agricultural Implement Workers of America.....	60,000
International Union of United Brewery, Flour, Cereal, Soft Drink and Distillery Workers of America.....	5,200
International Woodworkers of America	40,797
Journeymen Barbers, Hairdressers, Cosmetologists and Proprietors International Union of America.....	1,960
Laundry, Dry Cleaning and Dye House Workers' International Union	1,948
Longshoremen's Protective Union (St. John's)	2,000
Marine Workers' Federation	2,600
National Association of Broadcast Employees and Technicians	1,649
National Association of Marine Engineers of Canada, Inc.....	1,500
National Council of Canadian Labour.....	7,275
National Unemployment Insurance Commission Association	6,529
National Union of Public Employees	42,754
National Union of Public Service Employees	21,800
Newfoundland Government Employees Association	1,200
Northern Electric Employee Association	7,288
Office Employees' International Union	5,645
Oil, Chemical and Atomic Workers' International Union	10,969
Operative Plasterers' and Cement Masons' International Association of the United States and Canada.....	3,648
Order of Railroad Telegraphers	10,483
Retail Clerks' International Association	5,207
Retail, Wholesale and Department Store Union	16,000
Saskatchewan Civil Service Association	5,852
Seafarers' International Union of North America	15,700
Sheet Metal Workers' International Association	7,038
Shipyard General Workers' Federation of British Columbia.....	3,125
Textile Workers' Union of America	17,000
Tobacco Workers' International Union	6,407
Traffic Employees' Association	10,191
Trans-Canada Air Lines Sales Employees' Association	1,005
United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the United States and Canada.....	20,772
United Brotherhood of Carpenters and Joiners of America.....	69,369
United Cement Lime and Gypsum Workers' International Union	3,615
United Electrical, Radio and Machine Workers of America.....	19,900
United Fishermen and Allied Workers' Union	7,312
United Garment Workers of America.....	2,074
United Glass and Ceramic Workers of North America.....	4,500
United Hatters, Cap and Millinery Workers International Union.....	3,500
United Mine Workers of America.....	16,959
United Packinghouse Workers of America.....	23,250
United Paper Makers and Paper Workers	9,241
United Rubber, Cork, Linoleum and Plastic Workers of America.....	10,000
United Steelworkers of America.....	80,000
United Textile Workers of America.....	9,090
Union Catholique des Cultivateurs (Service Forestier).....	7,300
Union des Manuteneurs de Poisson de Nouveau Brunswick.....	1,025
Upholsterers' International Union of North America.....	2,700

Section 9.—Strikes and Lockouts

Statistical information on strikes and lockouts in Canada is compiled by the Economics and Research Branch of the Department of Labour on the basis of reports from the Unemployment Insurance Commission. Tables 36 and 37 cover strikes and lockouts involving six or more workers and lasting at least one working day, and strikes and lockouts lasting less than one day or involving fewer than six workers but exceeding a total of nine man-days. The developments leading to work stoppages are often too complex to make it practicable to distinguish statistically between strikes on the one hand and lockouts on the other. However, a work stoppage that is clearly a lockout is not often encountered.

The number of workers involved includes all workers reported on strike or locked out, whether or not they all belonged to the unions directly involved in the disputes leading to work stoppages. Where the number of workers involved varied in the course of a stoppage, the peak figure was used in tabulating annual totals. Workers indirectly affected, such as those laid off as a result of a work stoppage, were not included in the number of workers involved.

Duration of strikes and lockouts in terms of man-days is calculated by multiplying the number of workers involved in each work stoppage by the number of working days the stoppage was in progress. Where the number of workers involved varied during the period of a stoppage, an appropriate adjustment was made in the calculation as far as this was practicable. The duration in man-days of all work stoppages in a year is shown as a percentage of estimated working time, based on the annual average of all non-agricultural paid workers in Canada.

The data on duration of work stoppages in man-days are provided to facilitate comparison of work stoppages in terms of a common denominator. They are not intended as a measure of the loss of productive time to the economy.

36.—Strikes and Lockouts in Canada, 1950-58

Year	Strikes and Lockouts Beginning during Year	Strikes and Lockouts in Existence during Year			
		Strikes and Lockouts	Workers Involved	Duration in Man-Days	
				Man-Days	Percentage of Estimated Working Time
	No.	No.	No.	No.	p.c.
1950.....	158	161	192,153	1,389,040	0.13
1951.....	257	259	102,870	901,740	0.08
1952.....	216	222	120,818	2,879,960	0.29
1953.....	167	174	55,988	1,324,720	0.13
1954.....	156	174	62,250	1,475,200	0.15
1955.....	149	159	60,090	1,875,400	0.18
1956.....	221	229	88,680	1,246,000	0.11
1957.....	242	249	91,409	1,634,880	0.14
1958.....	253	262	112,397	2,872,340	0.24

37.—Strikes and Lockouts, by Industry, 1958

Industry	Strikes and Lockouts Beginning during Year	Strikes and Lockouts in Existence during Year		
		Strikes and Lockouts	Workers Involved	Duration in Man-Days
	No.	No.	No.	No.
Logging.....	9	9	2,388	11,960
Fishing.....	1	2	875	49,030
Mining.....	29	30	30,909	808,840
Coal.....	24	24	15,101	33,600
Metal.....	3	3	15,302	700,220
Non-metal.....	1	2	420	74,500
Quarrying.....	1	1	86	520
Manufacturing.....	87	93	32,244	1,025,390
Foods and beverages.....	8	8	695	31,220
Rubber products.....	1	1	850	850
Leather products.....	1	1	69	170
Textile products.....	3	3	356	4,760
Clothing.....	13	14	4,267	83,740
Wood products.....	12	14	2,575	59,080
Paper products.....	2	3	5,746	142,270
Printing, publishing and allied industries.....	3	3	942	9,340

37.—Strikes and Lockouts, by Industry, 1958—concluded

Industry	Strikes and Lockouts Beginning during Year	Strikes and Lockouts in Existence during Year		
		Strikes and Lockouts	Workers Involved	Duration in Man-Days
	No.	No.	No.	No.
Manufacturing—concluded				
Iron and steel products.....	14	14	9,554	519,460
Transportation equipment.....	3	3	2,779	86,580
Non-ferrous metal products.....	5	5	332	7,010
Electrical apparatus and supplies.....	8	9	2,083	31,570
Non-metallic mineral products.....	2	3	922	35,150
Products of petroleum and coal.....	2	2	53	1,090
Chemical products.....	8	8	833	7,550
Miscellaneous.....	2	2	188	550
Construction.....	60	60	32,372	809,920
Transportation and Communication.....	25	25	9,335	98,700
Transportation.....	23	23	7,565	94,860
Communication.....	2	2	1,770	3,840
Public Utility Operation.....	1	1	95	200
Trade.....	22	23	2,181	52,310
Finance, etc.....	2	2	13	170
Service.....	17	17	1,985	15,820
Community or public service.....	1	1	4	60
Government service.....	5	5	930	4,440
Recreational service.....	1	1	20	60
Business service.....	1	1	25	300
Personal service.....	9	9	1,006	10,960
Totals.....	253	262	112,397	2,872,340

Section 10.—Canada and the International Labour Organization

The Department of Labour is the officially designated liaison between the Government of Canada and the International Labour Organization. The ILO was established in 1919, in association with the League of Nations under the Treaties of Peace, with the object of improving labour and social conditions throughout the world by international agreement and legislative action. Under an agreement approved by the General Conference of the International Labour Organization and by the United Nations General Assembly in 1946, the Organization became a specialized agency of the United Nations although retaining its autonomy.

The ILO is an association of 80 Member States, financed by their governments, and democratically controlled by representatives of those governments and of their organized employers and workers. It is comprised of three main organs: (1) the Governing Body; (2) the International Labour Office; and (3) the International Labour Conference. Since World War II the ILO has extended its field of activities by the establishment of ten tripartite industrial committees to deal with problems of important world industries, by the holding of regional and special technical conferences, and by technical assistance to aid under-developed countries in such fields as co-operatives, vocational training, productivity techniques and employment service organization.

The Governing Body consists of 40 members—20 government representatives, 10 employers' representatives and 10 workers' representatives. Of the government seats, each of the 10 Member States of chief industrial importance (of which Canada is one) holds a permanent place, and the other 10 government representatives are elected triennially by the Conference. The worker and employer members are elected by their groups every three years at the Conference. The Governing Body meets three times a year and has supervision over the work of the International Labour Office and the various

Conferences and Committees, in addition to framing the budget and approving the agendas of the Conferences and meetings. Canada's representative on the Governing Body is the Assistant Deputy Minister of Labour for Canada.

The International Labour Office acts as the permanent secretariat of the ILO and as a world research and information centre and publishing house on all subjects concerned with working and living conditions. In the operational field it assists Member States by furnishing experts on manpower training and technical and other types of assistance. The ILO maintains branch offices in all parts of the world; the Canada Branch is located at 202 Queen Street, Ottawa.

The International Labour Conference is a world assembly for the consideration of labour and social problems. It meets annually and is attended by four delegates from each Member State (two representing the government, one representing the employers and one representing the workers) accompanied by technical advisers. The Conference formulates international standards concerning working and living conditions in the form of Conventions and Recommendations. A Convention, after adoption, must be considered by the competent authorities in each Member State with a view to possible ratification; however, each Member State decides whether or not to ratify any Convention, and only by ratification does it assume the obligation to bring its legislation in that field up to the standard set by the Convention. A Recommendation is less formal: it contains general principles for the guidance of governments in drafting legislation or in issuing administrative orders and is not subject to ratification by the Member States.

There have been 43 Sessions of the International Labour Conference at which 114 Conventions and 112 Recommendations have been adopted, covering a wide range of subjects such as industrial relations, freedom of association, hours of work, weekly rest, holidays with pay, minimum wages, night work of women and young persons, industrial health and safety, workmen's compensation, conditions of work for seamen and dockers and for fishermen, unemployment and health insurance, protection of migrant workers, equal remuneration, discrimination, forced labour, and many other aspects of industrial and social problems. By Jan. 1, 1960, ratifications of Conventions by Member States numbered 1,935.

Canada has ratified 19 ILO Conventions, of which 12 concern maritime and dock labour. In Canada the provincial legislatures are the competent legislative authorities with jurisdiction over the subjects covered by most of the ILO Conventions and Recommendations. The Department of Labour, as the official link with the International Labour Organization, is responsible for forwarding to the ILO annual reports on ratified Conventions as well as periodical reports on many other industrial and social matters. Canada is represented at most of the ILO annual and special meetings, and accounts of the discussions and the decisions are regularly published in the *Labour Gazette*. The Department also keeps the provincial governments and the major employer and worker organizations informed of ILO activities.

CHAPTER XVIII.—TRANSPORTATION

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NOTE.—The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

The physiographic and population characteristics of Canada present unusual difficulties from the standpoint of transportation. The country extends 4,000 miles from east to west and its main topographic barriers run in a north-south direction, so that sections of the country are cut off from one another by such water barriers as Cabot Strait and the Strait of Belle Isle separating the Island of Newfoundland from the mainland; by areas of rough, rocky forest terrain such as the region lying between New Brunswick and Quebec, and the areas north of Lakes Huron and Superior dividing the industrial region of Ontario and Quebec from the agricultural areas of the Prairie Provinces; and by the mountain barriers between the prairies and the Pacific Coast. Unevenly distributed along a narrow southern strip of Canada's vast area is its relatively small population of 17,442,000 (estimate of June 1, 1959). To such a country, with a population so dispersed and producing for export as well as for consumption in distant parts of the country itself, efficient and economical transportation facilities are necessities of existence.

The extent of government control over the agencies of transportation is covered in Part I of this Chapter; Parts II to VI deal with the various types of transport facility.

PART I.—GOVERNMENT CONTROL OVER AGENCIES OF TRANSPORTATION

The Federal Government's control and regulation of transportation reflect to a considerable extent conditions that date back to the period when the railways possessed a virtual monopoly of transportation within the country. Although federal regulation was a direct outcome of such particular matters as the prevention of unjust discrimination in rates and charges resulting from monopoly conditions in the industry and the safety of

transportation facilities and operating practices, yet the railways have been so involved in the public interest that their regulation has been extended to become the most comprehensive of any industry in Canada.

In the meantime, conditions in the transportation industry have been drastically altered by the increasing competition arising from the advance of highway transportation. Unlike the competition that existed between railways in early stages of their development, today's competition shows little indication of starting a trend toward consolidation and a return to semi-monopolistic conditions within the industry. Because so many shippers now provide their own transportation, it is evident that a large part of the present competition between common carriers has become a permanent feature of the transportation industry.

It is not surprising that regulations, which under monopoly conditions were not onerous to the railways or were purely nominal in their effect, are now alleged to have become increasingly restrictive and hampering under highly competitive conditions. Regulatory authorities are therefore faced with the problem of piecemeal revision of their regulations—retaining those where railway monopoly or near-monopoly conditions still make them necessary in the public interest, and relaxing those where competition can be relied on to protect the public in order to enable the railways to meet this competition more effectively. The emphasis has shifted from the regulation of monopoly to maintaining a balance between the several competing modes of transport. Indicative of this trend is the amendment to the Transport Act passed in 1955, which extends the freedom of the railways to make contract rates with shippers known as 'agreed charges'.

On Nov. 2, 1936, the amalgamation of the Department of Railways and Canals and the Department of Marine, together with the Civil Aviation Branch of the Department of National Defence to form the new Department of Transport brought under one control railways, canals, harbours, marine and shipping, civil aviation, radio and meteorology.

Road and highway development is mainly under provincial or municipal control or supervision. According to the judgment of the Judicial Committee of the Privy Council dated Feb. 22, 1954, jurisdiction over interprovincial and international highway transport rests with the Federal Government. Federal and provincial representatives conferred at Ottawa in April 1954 on means of implementing that decision and on June 26, 1954, the Motor Vehicle Transport Act was passed by the Federal Parliament giving to all provinces, at their option, the authority to apply to interprovincial and international highway transport the same regulations respecting certificates of public convenience and necessity and rates as they apply to undertakings operating entirely within the province. This Act has since been proclaimed in seven provinces.

The Board of Transport Commissioners for Canada.—The Board of Transport Commissioners for Canada was created and initially named the Board of Railway Commissioners for Canada by the Railway Act 1903, and was given its present name by the Transport Act 1938. It was organized on Feb. 1, 1904, and succeeded to all the powers and duties of its predecessor, the Railway Committee of the Privy Council. It was also given additional powers and duties which have been greatly enlarged since that date. When organized, the membership of the Board consisted of a Chief Commissioner, a Deputy Chief Commissioner and one Commissioner. In 1908 an Assistant Chief Commissioner and two other Commissioners were added. The Board is a statutory court of record, so constituted by the Railway Act and recognized as such by other courts, but it also has extensive regulative and administrative powers.

The great majority of applications and complaints to the Board are disposed of without hearing in open court, but public hearings are held in various places throughout Canada as the Board sees fit, particularly to suit the convenience of the parties and avoid expense to them. Evidence at public hearings is given under oath and interested parties appear personally or by counsel or representatives. The finding or determination of the Board upon any question of fact within its jurisdiction is binding and conclusive and no order or decision may be questioned or reviewed except on appeal to the Supreme Court of

Canada upon a question of law or a question of jurisdiction with leave of a Judge of that Court, or by the Governor in Council.* Two Commissioners are a quorum or 'panel' for the hearing of a case and it is not unusual for two panels to be sitting at the same time on different appeals.

The Board has jurisdiction under more than a score of Acts of Parliament, including jurisdiction, under the Railway Act and the Transport Act, over transportation by railway and by inland water, and over communication by telephone and telegraph.

Under the Railway Act its jurisdiction is, stated generally, in respect of construction, maintenance and operation of railways that are subject to the legislative authority of the Parliament of Canada, including matters of engineering, location of lines, crossings and crossing protection, safety of train operation, operating rules, investigation of accidents, accommodation for traffic and facilities for service, abandonment of operation, freight and passenger rates, and uniformity of railway accounting. The Board also has certain jurisdiction over telephones and telegraphs, including regulation of the telephone tolls of The Bell Telephone Company of Canada, the British Columbia Telephone Company, the Quebec and Gaspé Telephone Company and the Yellowknife Telephone Company, and over express traffic and tolls for the use of international bridges and tunnels.

The Board has jurisdiction to inquire into, hear and determine any application by any party interested who complains that any company or person has violated or failed to comply with the Railway Act or a Special Act or any order made thereunder, or who requests the Board to make any order or give any direction, leave, sanction or approval that, by law, it is authorized to make or give or with respect to any matter, act or thing that by the Railway Act or Special Act is prohibited, sanctioned or required to be done. It has power to make orders and regulations generally for carrying the Railway Act into effect and for exercising jurisdiction conferred on the Board by any other Act.

Regulation of railway freight and passenger rates is one of the Board's principal tasks. Except for certain statutory rates, it has power "to fix, determine and enforce just and reasonable rates, and to change and alter rates as changing conditions or cost of transportation may from time to time require"; it may disallow any tariff that it considers to be unjust or unreasonable or contrary to any provision of the Railway Act; it may prescribe other tolls in lieu of the tolls disallowed, or require the railway company to substitute a tariff satisfactory to the Board. Since the end of World War II there has been a succession of applications for authority to make general freight rate increases and general telephone rate increases.

A review of transport regulation was undertaken by the Royal Commission on Transportation, under the chairmanship of the Hon. W. F. A. Turgeon, which held extensive hearings in 1949-50 and issued its Report in 1951. (See 1952-53 Year Book, p. 741.) Certain of its recommendations, including the following, were incorporated into the Railway Act by amendments made in 1951: the equalization of freight rates; the requirement that, when transcontinental competitive freight rates are published, the corresponding rates to intermediate points shall not be more than one-third greater than the former; the payment by the Government of Canada of the cost of maintaining the so-called 'bridge' lines of the transcontinental railway systems in Ontario (between Sudbury, Capreol and Cochrane, and between Port Arthur and Armstrong) up to the amount of \$7,000,000 annually, the amounts so received by the railways to be applied to reductions in freight rates between Eastern and Western Canada over the trackage referred to; and the requirement of a uniform classification of accounts to be prescribed by the Board of Transport Commissioners for the Canadian Pacific Railway and the Canadian National Railways. Pursuant to the amendments, a uniform scale of mileage class rates has been prescribed by the Board and equalization of commodity rates is being proceeded with. The Board has also prescribed a uniform classification and system of accounts for railways and has approved a new freight classification.

* The Board's judgments are reported in *Canadian Railway Cases* and *Canadian Railway and Transport Cases*, and its judgments, orders, rulings and regulations are published fortnightly by the Queen's Printer, Ottawa, in what is known as *J.O.R. & R.*

Under the Transport Act the Board entertains applications for licences for ships to transport goods or passengers for hire or reward between places in Canada on the Great Lakes and the Mackenzie and Yukon Rivers, except goods in bulk on waters other than the Mackenzie River. Before granting a licence the Board must be satisfied that public convenience and necessity require such transport. The Board also has regulative powers over tolls for such transport.

'Agreed charges' between shippers and carriers, authorized by the Transport Act, were also reviewed by the Hon. W. F. A. Turgeon in 1955 and his recommendations were implemented in amendments to that Act in 1955. Under the amendments, an agreement for an agreed charge shall be executed in tariff form and a duplicate original shall be filed with the Board within seven days after the making of the agreement, and the agreed charge takes effect twenty days after the filing, without necessity of the Board's approval of the charge. The Board continues to have power to fix a charge for a shipper who is unjustly discriminated against by an agreed charge and it also has power to vary or cancel an agreed charge referred to it by the Minister of Transport or the Governor in Council for investigation.

The Board is required by the Railway Act to make an annual report to the Governor in Council through the Minister of Transport. Copies may be obtained from the Secretary.

During the year 1959, a total of 3,153 applications were submitted to the Board under the provisions of the Railway Act, the Transport Act, the Maritimes Freight Rates Act, the Pipe Lines Act* and other legislation under the Board's jurisdiction; 3,330 Orders and 18 General Orders were issued.

The Board, shortly after the interim freight rate increase of 17 p.c. was authorized in November 1958, required the railways to specify before Apr. 10, 1959, the amount of supplementary relief sought. But before that date, the Government announced that no further general increases would be allowed for a period of one year pending the findings of a Royal Commission to be established to inquire into the railway rate structure and other matters affecting railway transportation. The Royal Commission was appointed May 13, 1959 and is still conducting hearings (August 1960) across Canada, receiving submissions from the railways and all interested parties. On July 8, 1959, Parliament passed the Freight Rates Reduction Act. Designed as a relief measure for shippers, the Act provided a fund of \$20,000,000 to permit a reduction in class rates and commodity rates (other than competitive rates) on Canadian railways for a period of one year—to Aug. 1, 1960. In compliance with the Act, the Board of Transport Commissioners ordered the substitution of an increase of 10 p.c. for the said permissive increase of 17 p.c. A further reduction to 8 p.c. was ordered by the Board as of May 1960 to continue in effect until Aug. 1. By an amendment to the Freight Rates Reduction Act dated July 28, 1960, the reduced rates will remain in effect until Apr. 30, 1961, and the \$20,000,000 authorized in lieu of the higher rates is increased to \$35,000,000.

The Air Transport Board.—The Air Transport Board was established in September 1944 by amendment to the Aeronautics Act. Subsequent amendments to the Act were made in 1945, 1950 and 1952. The Board has three members including the Chairman, and the staff comprises an Executive Director's Branch including Legal and International Relations Divisions, an Operations Branch comprised of the Traffic Division, Special Traffic Adviser and the Licensing and Inspection Division, and a Secretary's Branch including Administrative and Special Projects Division.

The Board is responsible for the economic regulation of commercial air services in Canada and is also required to advise the Minister of Transport in the exercise of his duties and powers in all matters relating to civil aviation. The regulatory function relates to Canadian air services within Canada and abroad and to foreign air services operating into Canada. It involves the licensing of all such services and the subsequent regulation of the licensees in respect of their economic operation and the provision of service to the public.

* With the coming into effect of the National Energy Board Act as of Nov. 1, 1959, the administration of pipelines legislation was transferred to the National Energy Board.

As provided by the Act, the Board issues Regulations, approved by the Governor in Council, dealing with the classification of air carriers and commercial air services, applications for licences to operate commercial air services, accounts, records and reports, ownership, transfers, consolidations, mergers and leases of commercial air services, traffic tolls and tariffs, and other related matters. Detailed regulatory instructions are issued by the Board in the form of General Orders, relating to all air services or groups of air services; Board Orders relating to individual air services; and Rules and Circulars for general guidance and information.

Financial and operating statistics are collected under authority of the Board's Regulations by the Economics Division of the Department of Transport.

The Board continues to devote special attention to the uniform charter tariff and to its interpretation for the guidance of operators in the establishment of their rates and fares. Regional route operations are under current review by a staff committee set up for the purpose.

In the field of international aviation, the Board continues to take an active part in the work of the International Civil Aviation Organization, and to undertake bilateral negotiations with a number of countries for the exchange of traffic rights. Canada's two designated international scheduled carriers, Trans-Canada Airlines and Canadian Pacific Airlines Limited, have recently extended their operations pursuant to bilateral agreements, to serve Vienna and Rome, respectively (see pp. 871 and 872).

Canadian Maritime Commission.—By authority of an Act of Parliament (RSC 1952, c. 38) passed in 1947, the Canadian Maritime Commission was constituted for the purpose of examining into, keeping records of, and advising the Minister of Transport on matters pertaining to Canadian shipping and shipbuilding services. In addition to these duties, the Act empowers the Commission to:—

- (1) exercise and perform on behalf of the Minister such powers, duties and functions of the Minister under the Canada Shipping Act 1934 as the Minister may require;
- (2) administer, in accordance with regulations of the Governor in Council, any steamship subventions voted by Parliament; and
- (3) exercise or perform any other powers, duties or functions conferred on or required to be performed by the Commission by or pursuant to any other Act or order of the Governor in Council.

The Commission is also responsible for the administration of a number of the provisions of the Canadian Vessel Construction Assistance Act.

The National Energy Board.—The National Energy Act (SC 1959, c. 46) proclaimed Nov. 1, 1959, provided for the establishment of a five-member Board charged with the duty of assuring the best use of energy resources in Canada. In the performance of this function, the Board is responsible for the regulation of the construction and operation of the oil and gas pipelines that are under the jurisdiction of the Parliament of Canada, the tolls charged for transmission by oil and gas pipeline, the export and import of gas and the export of electric power, and the construction of the lines over which such power is transmitted. Up to mid-1960, the work of the Board was confined mainly to the conducting of hearings in connection with the issuing of permits to export oil and gas and for that reason is covered in more detail in the Foreign Trade Chapter of this volume (see Index).

PART II.—RAIL AND URBAN TRANSPORT*

Section 1.—Railways

Since Confederation the railways of Canada have been the principal utility for the movement of passengers and freight throughout, and beyond, the nation. The two great national systems, supplemented by a newly completed north-south line on the West Coast

* Revised in the Public Finance and Transportation Division, Dominion Bureau of Statistics; more detailed information is given in the annual reports of the Division. Certain of the financial statistics were compiled in co-operation with the Department of Transport.

and a few regional independent railways, are the only carriers able to transport large volumes of freight at low cost in all weather by continuous passage over Canadian transcontinental routes. Though highway and air competition is increasing, the railways still retain their primary position in the freight transport field. However, growing public preference for air travel on long trips and for the use of private automobiles over short distances has greatly affected railway passenger services. Passenger trains have been eliminated on some branch lines and reduced on certain main lines, and economies have been derived from the wide use of rail diesel cars.

The two national railway companies control a wide variety of Canadian and international transport and communication services. The government-owned Canadian National Railway System is the country's largest public utility and operates the greatest length of trackage in Canada. In addition, it operates a fleet of coastal and ocean-going steamships, a national telegraph system connecting the principal points of Canada with other parts of the world, an extensive express service in Canada and abroad, a chain of large hotels and resorts, and a scheduled air service connecting all major cities across the country and Canadian with other North American and European points. Its chief competitor, the Canadian Pacific Railway, is a joint-stock corporation operating an extensive transcontinental railway supported by a national telegraph system with connections throughout the world, a large fleet of inland, coastal and ocean-going vessels, a chain of year-round and resort hotels, a domestic north-south airline which is one of the world's great air-freight carriers, a transpacific airline service to the Orient and the Antipodes, air services to Mexico, Peru, Chile and Argentina, a transpolar air route connecting Vancouver and Amsterdam, a transatlantic service to Lisbon, Madrid and Rome, and a limited (one-flight daily each way) transcontinental air service between Vancouver and Montreal. Also included in the company's operations are a world-wide express service and a domestic truck and bus network.

The Pacific Great Eastern Railway, owned by the British Columbia Government, operates over a 788.6-miles route from North Vancouver to Fort St. John in the Peace River area of northeastern British Columbia, with a branch line from Chetwynd to Dawson Creek. The completion in 1958 of the northern extension of this line opened up to development the vast interior of the province and brought to an end the biggest railway construction job undertaken in North America for two decades. With the completion in May 1959 of the last link in the microwave system, the PGE became the first railway on the Continent to be operated entirely by means of radio communication.

The statistics of Subsections 1 to 3 of this Section cover the combined railway facilities of all companies operating in Canada, including intercity freight and passenger services of electric railway companies. Details relating to the Canadian National Railway System are dealt with separately in Subsection 4. A special article covering the consolidation and organization of the CNR appears in the 1955 Year Book at pp. 840-847.

Subsection 1.—Milage and Equipment

Construction was begun in 1835 on the first railway in Canada—the short link of 14.5 miles between Laprairie and St. Johns, Que.—but only 66 miles were in operation by 1850. The first great period of construction was in the 1850's when the Grand Trunk and the Great Western Railways were built as well as numerous smaller lines. The building of the Intercolonial and the Canadian Pacific Railways contributed to another period of rapid expansion in the 1870's and 1880's. In the last period of extensive railway building (1900-17), the Grand Trunk Pacific, National Transcontinental and Canadian Northern Railways were constructed.

Only a gradual increase has taken place in the milage of single track line since the 1920's. Recently, however, the development of a number of large industrial projects in districts far removed from transport facilities has necessitated the building of branch lines.

Those constructed up to 1956 are listed in the 1957-58 Year Book at p. 815, and those constructed in 1957 and 1958 in the 1959 Year Book at p. 775. During 1959 the eastern section of the Chibougamau branch line constructed by the CNR from St. Félicien to Cache Lake in Quebec, a distance of 133 miles, was officially opened; the western section of this line, from Beattyville to Chibougamau, was completed in 1957, opening up mineral-rich areas and linking them with the industrial centres of the province. On the 52-mile line from Optic Lake to Chisel Lake in Manitoba, track-laying and much of the first ballast lift were completed. This line is being constructed to connect a base metal mining development with the smelter at Flin Flon.

While new construction has added considerably to single track mileage placed in operation in the past few years, other lines have been abandoned because they have become unprofitable. Thus new mileage is not altogether reflected in the totals shown in Table 1.

1.—Railway Track Mileage Operated, 1900-58

NOTE.—Figures of total mileage of single track operated for 1835-1909 are given in the 1941 Year Book, p. 546; for 1911-14 in the 1954 edition, p. 786; for 1916-24 in the 1955 edition, p. 830; and for 1925-49 in the 1956 edition, p. 792.

SINGLE TRACK MILEAGE		TRACK MILEAGE BY PROVINCE AND TYPE				
Year	Miles in Operation	Province and Type of Track	1955	1956	1957	1958
	No.		No.	No.	No.	No.
1900.....	17,657	Single—				
1905.....	20,487	Newfoundland.....	910	934	934	934
1910.....	24,731	Prince Edward Island.....	285	285	285	285
1915.....	34,882	Nova Scotia.....	1,401	1,391	1,370	1,336
1920.....	38,805	New Brunswick.....	1,800	1,799	1,818	1,818
1925.....	40,350	Quebec.....	4,936	4,940	5,096	5,096
1930.....	42,047	Ontario.....	10,375	10,516	10,513	10,467
1935.....	42,916	Manitoba.....	4,979	4,974	5,005	5,004
1940.....	42,565	Saskatchewan.....	8,721	8,721	8,721	8,721
1945.....	42,352	Alberta.....	5,659	5,680	5,680	5,679
1950 ¹	42,979	British Columbia.....	3,981	4,015	4,071	4,388
1951.....	42,956	Yukon.....	88	58	58	58
1952.....	42,953	In United States.....	339	339	339	339
1953.....	43,163	Totals, Single.....	43,444	43,652	43,890	44,125
1954.....	43,132	Second.....	2,486	2,476	2,471	2,444
1955.....	43,444	Industrial.....	2,243	2,384	1,208	1,216
1956.....	43,652	Yard and sidings.....	11,142	11,318	11,528	11,534
1957.....	43,890	Grand Totals.....	59,315 ²	59,830 ²	59,097 ²	59,319 ²
1958.....	44,125					

¹ Newfoundland included from 1950.

² Includes 28 miles of joint track.

³ Excludes 51 miles of joint track.

Rolling-Stock.—Although the figures of Table 2 show the number of the different types of rolling-stock in operation at the end of year from 1949 to 1958, they do not by any means give a complete picture of rolling-stock capacity for service. Each year hundreds of units, particularly freight cars, are retired and replaced by new more efficient equipment, much of it specially designed and engineered for specific hauling jobs. Improvement in the efficiency of car use is also a factor that may reduce amount of equipment required. Between 1949 and 1958 the average capacity of box cars increased from 43.5 tons to 46.6 tons, of gondola cars from 61.5 tons to 65.6 tons, flat cars from 42.9 tons to 46.8 tons, hopper cars from 58.7 tons to 66.5 tons and of all freight cars from 45.3 tons to 50.8 tons. The average tractive power of locomotives advanced during the same period from 41,923 lb. to 52,095 lb. Table 2 shows the increasing number of diesel locomotives in service up to the end of 1958; rapid replacement of steam units continued during the following year and by mid-1960 dieselization of the major lines was almost complete.

2.—Railway Rolling-Stock in Operation as at Dec. 31, 1949-58

Type	1949	1951	1953	1955	1956	1957	1958
	No.	No.	No.	No.	No.	No.	No.
Locomotives	4,627	4,715	4,818	4,714¹	4,790	4,821	4,823
Steam—							
Coal burning.....	4,351	3,553	3,162	2,521	2,228	1,857	1,483
Oil burning.....		555	667	704	621	537	477
Diesel electric.....	246	574	956	1,455	1,895 ¹	2,372	2,799
Electric.....	30	33	33	33	46	55	64
Passenger Cars	6,224	6,366	6,456	6,574	6,220²	5,942	5,733
Coach.....	2,173	2,169	2,064	2,058	1,799	1,597	1,486
Combination.....	337	339	331	325	340	343	328
Immigrant.....	347	315	291	226	178	136	124
Dining.....	195	196	180	201	186	183	174
Parlour.....	175	153	161	172	173	167	162
Sleeping.....	775	803	801	969	925	879	900
Baggage, express and postal.....	1,766	2,201	2,430	2,433	2,404	2,398	2,336
Motor.....	54	49	59	75	90	129	139
Other.....	402	141	139	115	112	110	84
Freight Cars	177,614	180,725	187,980	185,956	191,974³	197,907	196,893
Automobile.....	6,075	6,396	7,560	7,406	6,370	6,733	6,722
Ballast.....	1,772	1,803	1,940	2,378	2,156	2,646	2,708
Box.....	118,576	121,318	119,753	114,814	118,353	121,346	117,604
Flat.....	10,951	11,062	11,690	12,037	11,876	11,975	12,058
Gondola.....	14,135	14,098	17,603	18,592	19,052	19,904	20,522
Hopper.....	9,100	8,897	11,598	12,247	12,870	13,788	15,493
Ore.....	1,902	1,902	1,969	2,559	5,465	5,967	6,004
Refrigerator.....	7,921	8,231	9,438	9,735	9,906	10,022	10,184
Stock.....	6,648	6,509	6,057	5,776	5,501	5,141	5,195
Tank.....	454	460	328	378	389	384	382
Other.....	80	49	44	34	16	1	21

¹ Includes one gasoline locomotive.
not specified as to type.

² Includes 13 cars not specified as to type.

³ Includes 20 cars

Subsection 2.—Finances

The tables in this Subsection give information on capital liability and capital investment, earnings, operating expenses, employees and their earnings and government aid to all railways.* Financial statistics of government-owned railways are given separately and in detail in Subsection 4. A Uniform Classification of Accounts for common carriers became effective for the Canadian National and the Canadian Pacific Railways on Jan. 1, 1956, and for all other railways on Jan. 1, 1957. In transportation statistics a distinction is made between expenditures and expenses. In this Subsection, the term 'expenses' is used as defined in the Uniform Classification of Accounts and refers to the expenses of furnishing rail transportation service and of operations incident thereto, including maintenance and depreciation of the plant used in such service.

Capital Liability and Investment.—The capital liability of railways operating in Canada for the years 1939 to 1958 is shown in Table 3. The increase of \$269,554,630 in 1958 over 1957 compares with an increase in investment in road and equipment property of \$342,996,674 as shown in Table 4.

* Statistics for individual railways are given in DBS annual report *Railway Transport*, published in six parts (Catalogues Nos. 52-207—52-212).

3.—Capital Liability of Railways, 1939-58

NOTE.—Figures for 1876 to 1925 are given in the 1927-28 Year Book, p. 649, and those for 1926-38 in the 1947 edition, p. 662.

(Exclusive of Canadian railway capital owned by Canadian railways)

Year	Stocks	Funded Debt	Total	Year	Stocks	Funded Debt	Total
	\$	\$	\$		\$	\$	\$
1939.....	1,834,329,209	1,533,373,521	3,367,702,730	1949.....	1,576,734,292	1,692,898,968	3,269,633,260 ²
1940.....	1,762,473,489	1,617,561,683	3,380,035,172	1950.....	1,649,462,038	1,826,346,222	3,475,808,310 ²
1941.....	1,697,545,699	1,699,942,865	3,397,488,564	1951.....	1,646,205,772	1,925,488,160	3,571,693,932 ²
1942.....	1,578,254,765	1,793,579,270	3,371,834,035	1952 ¹	2,406,309,060	1,308,899,612	3,715,208,672 ²
1943.....	1,614,936,131	1,741,664,036	3,356,600,167	1953.....	2,422,692,856	1,439,063,402	3,861,756,258 ²
1944.....	1,636,064,822	1,707,801,676	3,343,866,498	1954.....	2,499,778,848	1,475,815,267	3,975,594,115 ²
1945.....	1,631,973,055	1,701,786,399	3,333,759,954	1955.....	2,543,465,586	1,565,109,030	4,108,574,616 ²
1946.....	1,624,753,709	1,665,844,138	3,290,597,847	1956.....	2,572,487,313	1,612,706,551	4,185,193,864 ²
1947.....	1,623,607,219	1,685,010,672	3,308,617,891	1957.....	2,565,559,633	1,764,660,210	4,330,219,893 ²
1948.....	1,578,057,474	1,672,232,030	3,250,339,504	1958.....	2,646,659,697	1,953,114,826	4,599,774,523 ²

¹ Affected by readjustment in the capital structure of the CNR (see p. 817).
\$40,000,000 railway debt in Newfoundland assumed in 1949.

² Exclusive of approximately

4.—Capital Invested in Railway Road and Equipment Property, 1954-58

Investment	1954	1955	1956	1957	1958
	\$	\$	\$	\$	\$
Road.....	38,638,197	41,034,168	279,853,243	230,402,782	209,161,837
Equipment.....	192,349,672	77,802,675	148,090,038	189,767,702	133,254,564
General.....	Cr. 9,576,266	Cr. 316,406	7,871,446	Cr. 23,917,074	Cr. 1,673,544
Undistributed ¹	162,927	Cr. 12,615,995	12,098,201	17,529,606	2,253,817
CNR non-rail property.....	185,603	Cr. 12,153,325	6,245,238	6,573,570	6,017,011
CPR " ".....	Cr. 3,000	Cr. 447,000	5,760,522	9,943,881	Cr. 3,825,030
Other " ".....	Cr. 19,676	Cr. 16,670	62,441	1,012,155	61,896
Total Investment as at Dec. 31...	4,550,143,918	4,777,279,050²	5,225,191,978	5,638,974,994	5,981,971,668

¹ Prior to 1956 and the Uniform Classification of Accounts, these data included investments in separately operated property, leased lines and non-cash items. ² Includes \$121,230,690 invested in the Quebec North Shore and Labrador Railway which reported for the first time in 1955.

Revenues and Expenses.—During the ten-year period 1949-58, the ratio of expenses to revenues of railways operating in Canada has fluctuated between a low of 86.94 p.c. in 1950 and a high of 97.30 in 1958. The trend for both revenues and expenses has been generally upward during the period, revenues being 30.1 p.c. higher in 1958 than in 1949 and expenses 36.2 p.c. higher. As a result of outlay increasing more rapidly than income, net operating revenue per mile of line in 1958 was at its lowest point since 1938.

5.—Operating Revenues and Expenses of Railways, 1949-58

NOTE.—Operating revenues and expenses from 1875 are given in previous editions of the Year Book beginning with the 1916-17 edition.

Year	Total Operating Revenues	Total Operating Expenses	Ratio of Operating Expenses to Operating Revenues	Per Mile of Line			Freight Train Revenue per Freight Train Mile	Passenger Train Revenue per Passenger Train Mile
				Operating Revenues	Operating Expenses	Net Operating Revenues		
	\$	\$	p.c.	\$	\$	\$	\$	\$
1949 ¹	894,397,264	831,456,446 ²	92.96	20,866	19,398	1,468	8.66	3.10
1950.....	958,985,751	833,726,562 ²	86.94	22,311	19,397	2,914	9.45	3.19
1951.....	1,088,583,789	977,577,062 ²	89.80	25,348	22,763	2,585	10.05	3.36
1952.....	1,172,158,665	1,057,186,304 ²	90.19	27,272	24,597	2,675	10.56	3.50
1953.....	1,205,935,414	1,100,393,836 ²	91.25	28,020	25,567	2,453	11.43	3.53
1954.....	1,095,440,918	1,019,534,989 ²	93.07	25,402	23,642	1,760	11.58	3.44
1955.....	1,198,351,601	1,048,564,681 ²	87.50	26,876	23,517	3,359	12.21	3.60
1956.....	1,300,623,923	1,171,338,574	90.06	29,047	26,159	2,888	12.75	3.16
1957.....	1,263,147,930	1,203,530,146	95.28 ²	28,171	26,841	1,330	13.85	3.30
1958.....	1,163,735,417	1,132,277,504	97.30	25,766	25,070	696	14.51	3.11

¹ Newfoundland included from Apr. 1, 1949.

² Excludes equipment rents, joint facility rents and tax accruals.

6.—Distribution of Operating Expenses of Railways, 1956-58

Item	1956		1957		1958	
	\$	p.c.	\$	p.c.	\$	p.c.
Road maintenance.....	249,628,976	21.3	265,104,802	22.0	248,593,455	21.9
Equipment maintenance.....	251,328,643	21.4	256,689,993	21.3	253,744,614	22.4
Traffic.....	25,301,141	2.2	27,334,536	2.3	27,208,205	2.4
Transportation.....	494,229,680	42.2	478,428,123	39.8	440,116,687	38.9
General and miscellaneous.....	107,372,028	9.2	109,329,484	9.1	110,677,500	9.8
Rents and taxes ¹	43,478,106	3.7	66,643,208	5.5	51,937,043	4.6
Totals.....	1,171,338,574	100.0	1,203,530,146	100.0	1,132,277,504	100.0

¹ Reported as operating expenses in accordance with the Uniform Classification of Accounts adopted in 1956.

Employment and Salaries and Wages.—During the period 1949-58 the number of railway employees fluctuated between a low of 190,385 in 1950 and a high of 215,324 in 1956; the 1958 figure was very little above that of 1949. In the same period annual average salaries and wages increased almost steadily from \$2,721 to \$3,931. Maintenance-of-equipment employees, on hourly rates, worked 17 p.c. fewer average hours and were paid 81 p.c. more wages per hour; average hours worked by transportation employees were 16 p.c. fewer, while their pay per hour was about 69 p.c. higher. These figures reflect salary and wage increases and the effects on employment of the five-day work week inaugurated in 1951. Statistics from 1956 have been reported in accordance with the revised "Canadian Classification of Railway Employees and Their Compensation" which became effective Jan. 1, 1956.

7.—Railway Employees and Their Earnings, 1949-58

NOTE.—Figures include employees and wages for 'outside' operations amounting to from 3 to 6 p.c. of total employees and from 2 to 5 p.c. of total salaries and wages. Figures for 1912-39 are given in the 1941 Year Book, p. 551, and for 1940-48 in the 1951 edition, p. 723.

Year	Employees	Total Salaries and Wages	Average Salaries and Wages	Ratio of Total Payroll (charged to operating expenses) to—	
				Operating Revenues	Operating Expenses
	No.	\$	\$	p.c.	p.c.
1949 ¹	192,366	523,453,375	2,721	52.9	56.9
1950.....	190,385	523,008,515	2,747	49.8	57.2
1951.....	204,025	624,682,754	3,062	52.0	58.0
1952.....	214,143	669,457,962	3,126	52.1	57.7
1953.....	211,951	724,077,594	3,416	53.4	58.6
1954.....	196,307	661,829,774	3,371	54.3	58.3
1955.....	195,459	674,875,767	3,453	50.2	57.4
1956.....	215,324 ²	780,135,918	3,623	50.6	55.9
1957.....	212,426 ²	791,529,117	3,726	51.4	53.9
1958.....	192,809 ²	757,907,896	3,931	52.7	54.3

¹ Newfoundland included from Apr. 1, 1949.

² Includes employees engaged in cartage and highway transport (rail) operations.

Government Aid to Railways.—In order that the private railways of Canada might be constructed in advance of settlement as colonization roads or through sparsely settled districts where little traffic was available, it was necessary for federal and provincial governments and even for municipalities to extend some form of assistance. The form of aid was usually a bonus of a fixed amount for each mile of railway constructed and, in the early days, grants of land were also made other than for right-of-way. As the country developed, objections to the land-grant method became increasingly apparent and aid was given more frequently in the form of a cash subsidy for each mile of line, a loan or a subscription to the shares of the railway. Guarantees of debenture issues were given in a later period and, since the formation of the Canadian National Railways, all debenture issues of that System, except those for rolling-stock, have been guaranteed by the Federal Government. No new land grants or cash subsidies have been advanced by either the federal or provincial governments since 1939.

During the era of railway expansion before 1918, provincial governments guaranteed the bonds of some railway lines that afterwards were incorporated in the Canadian National Railway System. These bonds as they mature or are called are paid off by the Canadian National Railways, in large measure, through funds raised by the issue of new bonds with Federal Government guarantee. Bonds guaranteed by the Governments of New Brunswick, Ontario, Manitoba, Saskatchewan, Alberta and British Columbia have been eliminated in this manner in recent years. Railway bonds guaranteed by the Government of Canada at Dec. 31, 1958, amounted to \$1,024,612,449; this amount does not include \$97,756 perpetual debenture stock and guaranteed stock of the former Grand Trunk Railway, now part of the Canadian National Railway System, on which interest and dividends are guaranteed by the Federal Government.

Subsection 3.—Traffic

Table 8 shows passenger and freight statistics for all railways for the years 1949-58. A separate analysis of the operations and traffic of the Canadian National Railways is given at p. 820.

8.—Statistics of Passenger and Freight Services and Revenue Receipts, 1949-58

NOTE.—Figures for 1910-48 are given in the corresponding table of previous Year Books beginning with the 1922-23 edition.

Year	PASSENGER SERVICE				
	Revenue Passenger- Train Miles ¹	Passenger- Train Car Miles ¹	Passengers Carried ²	Passenger Miles	Passenger Miles per Mile of Line
	No.	No.	No.	No.	No.
1949.....	45,680,009	407,421,229	34,883,803	3,193,174,337	74,497
1950 ³	43,744,164	392,800,555	31,139,092	2,816,154,232	65,519
1951.....	46,200,947	415,178,734	30,995,604	3,110,240,504	72,424
1952.....	47,663,617	431,234,562	30,167,145	3,151,261,385	73,319
1953.....	46,977,271	430,726,717	28,736,159	2,985,943,809	69,378
1954.....	45,745,089	416,969,275	28,396,528	2,863,036,611	66,391
1955.....	44,556,022	417,729,975	27,229,962	2,891,685,018	64,853
1956.....	43,782,624	420,687,663	26,070,766	2,907,568,012	64,934
1957.....	41,629,954	409,175,053	22,965,974	2,925,132,819	65,236
1958.....	40,545,723	382,340,605	21,376,438	2,485,860,569	55,040
	Average Receipts per Passenger Mile	Average Receipts per Passenger	Average Passenger Journey	Average Passengers per Train	Passenger- Train Revenue per Passenger- Train Mile
	cts.	\$	miles	No.	\$
1949.....	2.66 ³	2.44 ³	92 ³	69	3.05
1950 ³	2.79	2.52	90	64	3.19
1951.....	2.86	2.87	100	67	3.36
1952.....	2.88	3.01	104	66	3.50
1953.....	2.88	2.99	104	64	3.53
1954.....	2.87	2.89	101	63	3.44
1955.....	2.87	3.05	106	65	3.60
1956.....	2.93	3.27	112	66	3.16
1957.....	2.97	3.78	127	70	3.30
1958.....	3.11	3.62	116	61	3.11
	FREIGHT SERVICE				
	Revenue Freight- Train Miles	Revenue Freight- Train Car Miles ⁴	Freight Carried ⁵	Freight Ton-Miles	Freight Ton-Miles per Mile of Line
	No.	No.	tons	No.	No.
1949.....	81,648,053	3,091,633,447	142,719,431 ³	56,338,230,000 ³	1,314,379 ³
1950 ³	81,397,148	3,093,946,961	144,218,319	55,537,900,000	1,292,120
1951.....	87,181,640	3,384,341,192	161,260,521	64,300,418,000	1,497,274
1952.....	89,217,123	3,551,802,171	162,175,381	68,430,417,000	1,592,146
1953.....	84,997,904	3,448,530,542	156,249,259	65,267,016,000	1,516,462
1954.....	75,334,248	3,088,504,846	143,194,840	57,547,300,439	1,333,216
1955.....	79,072,523	3,414,942,330	167,862,156	66,176,128,925	1,483,273
1956.....	87,088,493	3,890,694,617	189,608,272	78,819,966,395	1,760,135
1957.....	77,991,848 ⁷	3,540,096,145	174,163,028	71,047,229,093	1,584,343
1958.....	68,655,553	3,324,507,990	153,524,948	66,356,829,403	1,469,050

For footnotes, see end of table.

8.—Statistics of Passenger and Freight Services and Revenue Receipts, 1949–58—concluded

Year	FREIGHT SERVICE—concluded					
	Freight Receipts per Ton per Mile	Receipts per Ton Hauled	Average Length of Freight Haul	Average Train Load, Revenue Tons	Average Load per Loaded Car Mile	Revenue per Freight-Train Mile
	cts.	\$	miles	tons	tons	\$
1949.....	1.256 ³	4.96 ³	395 ³	689	29.65	8.62
1950 ⁴	1.385	5.33	385	682	28.91	9.45
1951.....	1.362	5.43	399	738	30.61	10.05
1952.....	1.377	5.81	422	767	31.68	10.56
1953.....	1.489	6.22	418	768	31.16	11.43
1954.....	1.516	6.09	402	764	30.34	11.58
1955.....	1.460	5.75	394	837	31.30	12.21
1956.....	1.409	5.85	416	905	33.12	12.75
1957.....	1.520	6.21	408	911 ²	32.86	13.85
1958.....	1.501	6.49	432	967	32.35	14.51

¹ Includes express, baggage, mail and other cars. ² Duplications included. ³ Newfoundland included for 1950 and subsequent years. ⁴ Includes caboose miles but excludes miles made in passenger and non-revenue trains. ⁵ Excludes traffic handled by more than one railway; see Table 9 for details of freight carried.

Revenue freight carried on railways in 1958 was considerably lower than in 1957, the over-all decrease amounting to 11.8 p.c. Among the main commodity groups, agricultural products was the only one to record an increase, attributable to higher shipments of grain. Mine products were down 18.3 p.c., animal products 15.7 p.c., forest products 12.5 p.c., and manufactures and miscellaneous products 10.0 p.c. Of the 153,441,756 tons moved in 1958 (excluding freight handled by more than one railway and in intermediate switching), mine products accounted for 39.0 p.c., manufactures and miscellaneous products for 30.3 p.c., agricultural products for 19.1 p.c., forest products for 9.5 p.c., animal products for 1.1 p.c., and less than carload freight for 1.0 p.c.

9.—Commodities Hauled as Freight on Railways, 1955–58

NOTE.—In this table duplications are eliminated, i.e., the same freight handled by two or more railways is counted only once. The statistics do not include the United States lines of the Canadian National Railways, but the link of the Canadian Pacific Railway line across Maine, U.S.A., is included, as are the Canadian sections of United States railways.

Commodity	1955	1956	1957	1958
	tons	tons	tons	tons
Agricultural Products.....	27,275,365	34,770,962	28,376,417	29,309,235
Wheat.....	11,421,085	16,325,517	13,160,234	14,553,875
Oats.....	1,544,268	1,811,875	1,709,666	1,490,516
Other grain.....	4,840,613	6,011,812	5,136,833	5,181,033
Flour, wheat.....	1,735,338	1,428,791	1,449,408	1,629,846
Other mill products.....	3,130,393	4,104,575	2,057,225	1,887,424
Other agricultural products.....	4,603,673	5,088,392	4,863,051	4,566,561
Animal Products.....	2,065,582	2,085,204	1,939,952	1,634,878
Livestock.....	636,894	652,005	654,985	605,105
Meats and other edible packing-house products.....	724,399	698,508	645,307	506,288
Other animal products.....	704,289	734,691	639,660	523,485
Mine Products.....	69,996,302	78,396,685	73,322,895	59,895,924
Coal, anthracite.....	2,722,466	2,976,996	2,129,366	1,615,401
Coal, bituminous, subbituminous, lignite.....	15,367,402	15,875,557	14,657,576	12,854,100
Coke.....	1,889,574	2,059,478	2,107,206	1,585,402
Ores and concentrates.....	25,253,017	30,895,963	29,266,699	21,287,157
Sand and gravel.....	6,913,537	6,375,001	6,704,330 ²	6,997,118
Stone (crushed, ground, broken).....	3,787,020	4,372,832	7,777,451	7,017,430
Other mine products.....	14,083,286	15,840,858	10,580,267 ²	8,539,316

9.—Commodities Hauled as Freight on Railways, 1955-58—concluded

Commodity	1955	1956	1957	1958
	tons	tons	tons	tons
Forest Products	17,716,722	18,958,045	16,645,960	14,556,917
Logs, posts, poles, piling and ties.....	2,140,987	2,228,379	2,193,371	1,946,490
Cordwood and other firewood.....	93,753	73,266	45,736	31,007
Pulpwood.....	6,018,071	7,172,754	6,544,706	4,731,075
Lumber, timber, box, crate and cooperage material.....	8,469,824	8,353,301	6,797,042	6,802,421
Other forest products.....	994,087	1,130,345	1,065,105	1,045,924
Manufactures and Miscellaneous	48,580,865	53,113,053	51,690,052	46,534,971
Gasoline and petroleum products.....	8,629,172	9,357,348	8,790,643	8,402,525
Iron and steel (bar, sheet, structural, pipe).....	3,790,921	5,490,354	5,584,331	3,672,395
Automobiles, trucks and parts.....	2,784,925	2,428,709	2,132,072	1,518,229
Newsprint.....	4,245,705	4,578,441	4,573,228	4,115,818
Wood pulp.....	2,505,198	2,659,767	2,479,597	2,312,458
Other manufactures and miscellaneous.....	26,624,944	28,598,434	28,130,181	26,513,546
Less than Carload Lots	2,227,320	2,284,323	2,068,885	1,509,831
Grand Totals	167,862,156	189,608,272	174,044,161	153,441,756

Railway Accidents.—The figures given in Tables 10 and 11 of persons killed or injured on railways include those involved in both train and non-train accidents. All passengers injured are included in the figures but, for employees, only those that kept the employee from his work for at least three days during the ten days following the accident are recorded.

10.—Passengers, Employees and Others Killed or Injured on Railways, 1949-58

NOTE.—Figures for 1919-48 are given in the corresponding tables of previous Year Books beginning with the 1922-23 edition.

Year	Passengers		Employees		Others ¹		Totals	
	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured
	No.	No.	No.	No.	No.	No.	No.	No.
1949 ²	1	316	71	8,794	257	824	329	9,934
1950.....	18	297	67	8,108	232	744	317	9,149
1951.....	5	221	84	7,651	301	723	390	8,595
1952.....	2	183	74	7,019	317	707	393	7,909
1953.....	4	181	35	5,917	266	727	305	6,825
1954.....	4	251	48	4,654	245	586	297	5,491
1955.....	1	235	48	4,467	258	552	307	5,254
1956.....	7	126	71	4,378	301	649	379	5,153
1957.....	2	193	36	4,082	287	580	325	4,855
1958.....	1	124	46	3,315	280	445	327	3,884

¹ Includes postal, express and pullman employees, trespassers and others.
from Apr. 1, 1949.

² Newfoundland included

Accidents tabulated include all those in which railway trains were involved and accidents on railway property. The classification of accidents used for DBS vital statistics treats collisions between motor vehicles and trains as motor vehicle accidents; provincial statistics also class them as motor vehicle accidents and consequently adjustments should be made when compiling total accidental deaths of all kinds or comparing results of accidents of different kinds, such as train and motor vehicle.

11.—Persons Killed or Injured on Railways, by Specified Cause, 1956-58

Class of Person and Description of Accident	1956		1957		1958	
	Killed	Injured	Killed	Injured	Killed	Injured
ACCIDENTS RESULTING FROM MOVEMENT OF TRAINS, LOCOMOTIVES OR CARS						
Class of Person—	No.	No.	No.	No.	No.	No.
Passengers.....	7	84	2	143	1	83
Employees.....	55	1,637	27	1,348	33	1,016
Trespassers.....	82	56	84	77	78	51
Non-trespassers.....	214	514	197	432	192	299
Postal clerks, expressmen, etc.....	1	20	—	18	—	13
Totals.....	359	2,311	310	2,018	304	1,462
Description of Accidents (Employees and Passengers only)—						
Coupling and uncoupling.....	2	85	—	67	3	46
Collisions.....	22	129	10	99	6	58
Derailments.....	4	52	2	110	2	40
Locomotives or cars breaking down.....	—	—	—	6	—	1
Falling from trains or cars.....	3	117	4	76	7	79
Getting on or off trains.....	5	389	2	341	3	255
Struck by trains, etc.....	13	34	4	24	7	20
Overhead and other obstruction.....	1	25	2	28	—	11
Other causes.....	12	890	5	740	6	589
Totals.....	62	1,721	29	1,491	34	1,099
ALL OTHER ACCIDENTS						
Class of Person—	No.	No.	No.	No.	No.	No.
Stationmen.....	1	362	—	272	2	256
Shopmen.....	2	1,117	2	1,016	2	764
Trackmen.....	12	807	5	919	7	836
Other employees.....	1	455	2	527	2	443
Passengers.....	—	42	—	50	—	41
Others.....	4	59	6	53	10	82
Totals.....	20	2,842	15	2,837	23	2,422

Subsection 4.—The Canadian National Railway System*

In view of the interest in Canada's publicly owned railway, the Canadian National Railway System is given separate treatment in this Subsection. Its history is presented in a special article published in the 1955 Year Book at pp. 840-847. More detailed information than can be given here is obtainable from DBS annual report *Canadian National Railways* (Catalogue No. 52-201).

Financial Statistics.—The original financial structure of the CNR and the steps taken through the Capital Revision Acts of 1937 and 1952 to alleviate the burden of interest debt undertaken by the company on its formation in 1923 are described in the special article mentioned above. Briefly, the Capital Revision Act of 1937 wrote off all loans that had been made to cover deficits and also unpaid interest on loans, and certain

* The Hudson Bay Railway, formerly managed and operated for the Federal Government by the CNR, was absorbed into the Canadian National Railway System on Jan. 1, 1958, to be operated in the same manner as other Canadian Government railway lines. Statistics of the Hudson Bay Railway are therefore included with CNR data for 1958 and subsequent years.

loans made for the purpose of additions and betterments were converted to equity capital, relieving the CNR from paying fixed charges on this amount. Under the 1952 Capital Revision Act, 50 p.c. of the company's interest-bearing debt was changed to preferred stock on which, after settling income taxes, a dividend of 4 p.c. is paid on earnings. Also for a term of ten years ending Dec. 31, 1961, the Railway is not obliged to pay interest on \$100,000,000 of its long-term debt. The Government is authorized to buy additional preferred stock annually in amounts related to the company's gross revenues. As a consequence, the proportion of total capitalization represented by equity capital in shareholders' account was raised from 34.5 p.c. at Dec. 31, 1951 to 67.2 p.c. at Jan. 1, 1952, and the proportion of borrowed capital was correspondingly reduced.

12.—Capital Structure of the Canadian National Railway System as at Dec. 31, 1949-58

At Dec. 31—	Shareholders' Capital		Funded Debt Held by Public		Government Loans and Appropriations—Active Assets in Public Accounts	Totals
	Government of Canada Shareholders' Account	Capital Stock Held by Public	Guaranteed by Federal and Provincial Governments	Other		
	\$	\$	\$	\$	\$	\$
1949.....	774,448,716	4,560,290	539,706,744	85,159,176	743,661,162	2,147,536,088
1950.....	776,395,649	4,520,890	566,418,607	92,611,634	739,847,514	2,179,794,294
1951.....	776,395,649	4,518,890	518,396,607	96,800,428	857,573,774	2,253,685,348
1952.....	1,531,072,324	4,516,490	518,396,607	87,098,222	228,055,165	2,369,138,808
1953.....	1,552,050,067	4,514,490	513,977,391	75,834,299	342,140,048	2,488,516,295
1954.....	1,571,393,181	4,514,490	910,422,885	62,546,711	126,771,981	2,675,649,248
1955.....	1,591,902,624	4,511,150	861,870,899	34,493,192	199,444,622	2,692,222,487
1956.....	1,616,270,966	4,508,670	794,482,906	25,086,606	353,664,828	2,794,013,976
1957.....	1,639,451,306	4,505,870	730,346,711	17,978,788	623,967,851	3,016,250,526
1958.....	1,704,387,845	4,504,203	1,024,710,205	9,098,765	484,791,699	3,227,492,717

In Table 13 the assets of the Canadian National Railway System as at Dec. 31, 1958, are compared with those at the time of consolidation of the System.

13.—Assets of the Canadian National Railway System as at Dec. 31, 1922 and 1958

NOTE.—Based on the revised Uniform Classification of Accounts adopted in 1956.

Account	Dec. 31, 1922	Dec. 31, 1958	Increase or Decrease
	\$	\$	\$
Current Assets.....	87,580,218	190,098,492	102,518,184
Cash.....	14,651,422	30,059,862	15,408,440
Special deposits.....	6,139,435	40,776	-6,098,659
Traffic accounts receivable.....	2,528,622	4,403,922	1,875,300
Agent and conductor balances.....	5,386,673	31,902,218	26,515,545
Other accounts receivable.....	16,981,289 ¹	23,854,353	6,873,064
Government of Canada due on deficit account.....	—	3,591,424	3,591,424
Material and supplies.....	41,408,999	87,237,502	45,828,503
Interest and dividends receivable.....	377,003	1,346,901	969,898
Other current assets.....	106,775	7,661,444	7,554,669

¹ Includes "loans and bills receivable" and "rents receivable".

13.—Assets of the Canadian National Railway System as at Dec. 31, 1922 and 1958—concluded

Account	Dec. 31, 1922	Dec. 31, 1958	Increase or Decrease
	\$	\$	\$
Investments	1,842,423,131	3,706,430,434	1,864,002,303
Road and equipment property.....	1,765,323,644	3,475,906,297	1,710,582,653
Improvements on leased property.....	1,492,123	1,429,190	-62,933
Acquisition adjustment—U.S. lines.....	—	Cr. 3,776,424	-3,776,424
Non-rail property.....	34,767,914	97,258,515	62,490,601
Capital and other reserve funds.....	6,171,808	605	-6,171,303
Investments in affiliated companies.....	24,253,323	133,909,529	109,656,206
Other investments.....	10,419,319	1,702,822	-8,716,497
Deferred Assets	12,325,297	26,443,162	14,117,865
Working fund advances.....	166,847	767,652	600,805
Insurance and other funds.....	352,488	15,000,000	14,647,512
Other deferred assets.....	11,805,962	10,675,510	-1,130,452
Unadjusted Debts	15,697,557	29,882,935	14,185,378
Prepayments.....	322,059	2,907,897	2,585,838
Discount on funded debt.....	1,919,635	14,557,211	12,637,576
Other unadjusted debts.....	13,455,863	12,417,827	-1,038,036
Grand Totals	1,958,031,203	3,952,854,933	1,994,823,730

The financial details presented in Table 14 are those of the entire Canadian National Railway System, including both Canadian and United States operations. Revenues and expenses include those of express and commercial communications throughout, and highway transport (rail) operations from 1956. In conformity with the requirements of the Uniform Classification of Accounts, tax accruals and rents have been charged to operating expenses since Jan. 1, 1956.

14.—Total Revenue, Operating Expenses, Net Revenue, Fixed Charges and Deficits of the Canadian National Railway System¹, 1949-58

NOTE.—Figures for 1911-25 are given in the 1936 Year Book, p. 660; for 1926-39 in the 1942 Year Book, p. 590; and for 1940-48 in the 1951 edition, p. 731.

Year	Total Operating Revenue	Total Operating Expenses	Income Available for Fixed Charges	Total Fixed Charges	Net Income or Deficit ²	Cash Deficit or Surplus ³
	\$	\$	\$	\$	\$	\$
1949 ⁴	500,723,386	478,501,660	6,152,649	48,631,896	Dr. 42,479,247	Dr. 42,043,027
1950.....	553,831,581	493,997,079	44,084,904	47,421,983	" 3,337,079	" 3,261,235
1951.....	624,834,120	580,150,221	31,722,439	48,176,558	" 16,454,069	" 15,031,996
1952.....	675,219,415	634,852,915	25,702,660	25,415,189	Cr. 287,471	Cr. 142,327
1953.....	696,622,451	659,049,086	29,238,623	29,376,160	Dr. 137,537	" 244,017
1954.....	640,637,280	626,465,374	7,574,821	32,527,264	" 24,952,443	Dr. 28,758,098
1955.....	683,088,794	629,013,125	43,478,955	33,004,300	Cr. 10,474,655	Cr. 10,717,689
1956.....	774,800,647	728,008,837	57,623,710	31,782,991	" 25,840,719	" 26,076,951
1957.....	753,165,964	755,214,378	6,913,660	36,971,680	Dr. 30,058,020	Dr. 29,572,541
1958.....	704,947,410	719,211,865	Dr. 4,779,895	46,521,236	" 51,301,131	" 51,591,424

¹ Includes the Central Vermont Railway, Incorporated to 1956; operations of this line were terminated November 1955. ² Includes appropriations for insurance fund. ³ Contributed by or paid to the Federal Government. ⁴ Newfoundland included from Apr. 1, 1949.

Milage and Traffic.—At Dec. 31, 1958, first main track milage of the Canadian National Railways (including electric lines and lines in the United States but excluding lines of the Northern Alberta Railways and Toronto Terminals Railway controlled jointly by the Canadian National and the Canadian Pacific Railways) was 25,001 miles.

15.—Train Traffic Statistics of the Canadian National Railways (Canadian and United States Lines), 1956-58

NOTE.—Includes electric lines.

Milage and Traffic		1956	1957	1958
Train Milage.....	miles	74,590,251	68,133,477	62,732,107
Passenger service.....	"	24,268,051	23,820,127	23,075,444
Freight service.....	"	47,944,638	42,073,087	37,507,065
Work service.....	"	2,377,562	2,240,263	2,149,598
Passenger-Train Car Milage.....	miles	231,782,455	235,129,921	219,959,605
Coaches and combination (excl. work service).....	"	60,183,840	58,647,757	54,026,074
Motor unit cars.....	"	1,916,297	2,293,943	3,895,660
Parlour, sleeping and dining cars.....	"	66,745,097	68,480,708	59,647,337
Baggage, mail, express, etc.....	"	102,937,221	105,707,513	102,390,534
Freight-Train Car Milage.....	miles	2,178,095,356	1,956,953,773	1,856,288,249
Loaded freight.....	"	1,418,589,141	1,268,986,013	1,193,097,849
Empty freight.....	"	711,236,051	645,428,815	625,314,743
Caboose.....	"	48,270,164	42,538,945	37,875,657
Work-Train Car Milage.....	miles	4,810,716	4,977,773	7,361,184
Passenger Traffic—				
Passengers carried (earning revenue).....	No.	15,989,368	13,920,236	12,737,113
Passengers carried (earning revenue) one mile.....	"	1,500,929,719	1,498,655,566	1,268,780,666
Passenger-miles per mile of road.....	"	61.842	61.719	50.993
Average passenger journey.....	miles	93.87	107.66	99.61
Average amount received per passenger.....	\$	2.87	3.36	3.26
Average amount received per passenger mile.....	\$	0.03054	0.03124	0.03270
Average passengers per train mile.....	No.	61.85	62.92	54.98
Total passenger-train earnings per train mile.....	\$	4.45	4.64	4.45
Freight Traffic—				
Revenue freight carried.....	tons	99,033,731	88,880,881	79,486,001
Revenue freight carried one mile.....	"	41,935,368,811	36,673,910,825	35,076,836,756
Revenue freight carried one mile per mile of road.....	"	1,721,343	1,504,385	1,404,774
Total (all classes) freight carried one mile per mile of road.....	"	1,823,510	1,587,684	1,467,772
Average tons revenue freight per train mile.....	No.	875	872	935
Average tons (all classes) freight per loaded car mile.....	"	31.22	30.42	30.64
Average hauls revenue freight.....	miles	423.45	412.62	441.30
Freight revenue per train mile.....	\$	12.78	13.96	14.54
Freight revenue per ton.....	\$	6.19	6.61	6.86
Freight revenue per ton mile.....	\$	0.01461	0.01601	0.01554

Section 2.—Express Companies

Express, which is actually expedited freight carried on passenger trains, is one of the services provided by companies which do not own the means of conveyance but use the facilities of railway companies under contract. The majority of such contracts provide for payment to the railways of a fixed percentage of the gross express revenue.

Express companies are organized under authority of federal legislation and their business concerns the rapid transit of valuable or perishable commodities and animals, the delivery of parcels and the issuing of financial papers, money orders, travellers cheques and letters of credit. Express rates are usually much higher than freight rates and the two services are not normally competitive. Both tariffs are subject to the approval of the Board of Transport Commissioners.

Five express organizations operate in Canada—four Canadian and one American. The Canadian Pacific Express Company is a subsidiary of the Canadian Pacific Railway Company and handles the express business on the railways and the inland and ocean steamship lines of the parent company. The express business of the Algoma Central and Hudson Bay Railway, the Canadian National Railway System, and the Northern Alberta Railways is handled by departments of the respective railways. The Railway Express Agency Incorporated of the United States operates over the Canadian sections of United States railways and over the route from Skagway in Alaska to points in Yukon Territory. Operations of the Algoma Central and Hudson Bay Railway express department were reported for the first time in 1957. No statistics are available on the volume of express traffic because much of it consists of parcels and small lots that cannot be classified.

16.—Summary Statistics of Express Companies, 1949-58

NOTE.—Figures for 1911-48 are given in the corresponding table of previous Year Books beginning with the 1927-28 edition.

Year or Company	Mileages Operated in Canada ¹	Gross Earnings	Operating Expenses ²	Express Privileges ³	Net Operating Revenue
	No.	\$	\$	\$	\$
1949.....	54,806	51,966,290	32,385,223	21,226,817	Dr. 1,645,750
1950.....	55,581	52,017,492	32,881,689	21,355,956	" 2,220,153
1951.....	57,355	60,423,503	38,374,128	21,037,164	1,012,211
1952.....	57,335	70,185,114	44,744,018	24,428,739	1,012,357
1953.....	55,805	74,296,948	49,569,842	23,584,806	1,142,300
1954.....	68,373	70,039,054	48,167,243	20,753,503	1,118,308
1955.....	65,916	73,434,962	48,726,272	23,533,770	1,174,920
1956.....	67,984	88,012,718	60,180,066	27,114,672	717,980
1957.....	65,516 [*]	85,630,963	61,385,390	23,870,836	374,737
1958.....	65,982	86,558,161	62,120,291	23,797,450	640,420
1958					
Algoma Central and Hudson Bay Rly.	322	122,213	76,617	22,800	22,796
Canadian National Express.....	43,803	42,323,942	30,222,719	11,641,099	460,124
Canadian Pacific Express.....	18,274	37,680,429	26,971,560	10,551,369	157,500
Northern Alberta Railways.....	928	615,981	329,076	289,905	—
Railway Express Agency, Inc. (U.S.A.).	2,655	5,815,596	4,520,319	1,295,277	—

¹ Over railways, boat lines, motor carrier and aircraft routes.

ance with the Uniform Classification of Accounts adopted Jan. 1, 1956.

to the carriers, i.e., railways, steamship lines, etc., for transporting express matter.

² Includes tax accruals from 1956 in accordance with the Uniform Classification of Accounts adopted Jan. 1, 1956.

³ Amounts paid by express companies

17.—Business Transacted by Express Companies in Financial Paper, 1954-58

Item	1954	1955	1956	1957	1958
	\$	\$	\$	\$	\$
Money orders, domestic and foreign....	130,907,463	133,479,411	137,713,945	134,742,142	133,303,403
Travellers cheques, domestic and foreign.....	7,788,302	8,110,137	8,450,960	9,047,823	9,096,103
C.O.D. cheques.....	20,966,806	20,656,763	19,985,044	18,417,906	20,117,337
Telegraphic transfers.....	214,475	167,577	140,283	488,156	129,420
Totals.....	159,777,046	162,413,878	166,290,232	162,696,027	162,646,263

18.—Employees, Salaries, Wages and Commissions of Express Companies, 1949-58

Year	Employees ¹	Salaries and Wages ¹	Commissions Paid	Year	Employees ¹	Salaries and Wages ¹	Commissions Paid
	No.	\$	\$		No.	\$	\$
1949.....	8,809	23,621,322	2,283,425	1954.....	11,450	35,882,288	2,691,440
1950.....	8,974	24,195,490	2,177,933	1955.....	11,593	36,200,739	2,745,259
1951.....	9,610	28,607,463	2,443,341	1956.....	12,448	40,981,769	3,044,285
1952.....	10,849	32,503,058	2,689,830	1957.....	12,133	42,172,398	2,930,514
1953.....	12,119	37,413,060	2,795,766	1958.....	11,507	42,460,212	2,963,996

¹ Full-time employees only for 1949-53 and all employees, including part-time, for 1954-58.

Section 3.—Urban Transit Systems

The collection of statistical information on urban transportation systems has been extensively reorganized. Because of the drastic changes made in recent years in types of vehicles used for mass passenger movement in urban centres, the statistical series that began with the financial and operating statistics of electric railways and later included their motor bus and trolley coach lines, became quite inadequate.

Statistics of urban transit operations were previously contained in part in each of three statistical series: the monthly *Transit Report*, and the annual *Electric Railways and Motor Carriers, Freight-Passenger* reports. By 1954 it had become apparent that these reports dealt with four distinct and separate industries—the passenger bus industry, the urban transit industry, the intercity electric railway industry, and the motor carrier-freight industry—and that revision was necessary. As a first step, companies reporting 1954 statistics for the monthly transit report were divided into two groups on the basis of predominant type of operation, i.e., either urban transit or passenger bus (intercity and rural). Companies receiving more than 50 p.c. of their revenue from urban transit operations were defined as "Urban Transit" and those receiving more than 50 p.c. from intercity and rural passenger bus traffic were classified as "Passenger Bus (intercity and rural)". Starting January 1955, separate monthly reports were produced for the urban transit and the passenger bus industries.

During 1955, a similar examination was made of companies reporting statistics for the annual reports *Electric Railways and Motor Carriers, Freight-Passenger*. The former presented data for companies which operated or had at one time operated electric rail lines including urban streetcars, most of which had become strictly urban transit carriers using trolley coaches and motor buses. A new classification of these companies was made, also based on the predominant characteristic of their operations, i.e., either urban transit or electric railway (intercity and rural). Data for the latter group, which numbered five in 1958, are now included in the Railway Transit series of reports; data for the companies whose operations are predominantly urban are included in the monthly and annual series on Urban Transit statistics; and the *Electric Railways* report has been discontinued.

The companies reporting to the Motor Carriers, Freight-Passenger series formerly included those engaged in passenger bus operations, both urban and intercity and rural, as well as freight carriers. The operations of those companies are now being reported in

the Passenger Bus (intercity and rural) series, the Urban Transit series, or the Motor Carriers, Freight series, depending on the predominant characteristic of their operations. Thus, the annual *Urban Transit* report has contained, from 1956, statistics for the industry as a whole, including operations of motor buses, trolley coaches, streetcars and subway cars carrying passengers in urban and suburban service.

19.—Summary Statistics of Urban Transit Systems, 1956-58

Item		1956	1957	1958
Passengers Carried	No.	1,151,928,811	1,125,608,597	1,079,712,025
Streetcar.....	"	307,415,194	256,189,707	218,413,895
Trolley coach.....	"	242,795,718	235,768,206	214,246,021
Subway car.....	"	36,224,003	36,579,014	35,932,278
Motor bus.....	"	557,154,740	589,062,762	603,090,330
Chartered.....	"	8,339,156	8,008,908	8,029,501
Vehicle-Miles Run	No.	203,888,474	204,031,256	199,480,833
Streetcar.....	"	42,347,516	36,371,275	31,029,013
Trolley coach.....	"	37,811,429	37,453,599	36,878,121
Subway car.....	"	6,152,164	6,984,792	6,921,792
Motor bus.....	"	115,055,001	120,789,481	122,489,063
Chartered.....	"	2,522,364	2,432,139	2,162,844
Fuel Consumed—				
Gasoline.....	gal.	15,420,219	14,024,296	12,004,077
Propane gas.....	"	337,383	298,114	284,219
Diesel oil.....	"	8,670,913	10,980,414	12,719,288
Gross Passenger Revenue	\$	129,213,139	133,039,879	133,732,764
Passenger Vehicles in Service	No.	6,928	7,156	7,070
Streetcar.....	"	1,493	1,287	1,083
Trolley coach.....	"	1,199	1,221	1,221
Subway car.....	"	134	134	136
Motor bus.....	"	4,102	4,514	4,630

20.—Financial Statistics of Urban Transit Systems, 1956 and 1958

Item		1956	1957	1958
		\$	\$	\$
Total assets.....	\$	412,670,989	438,141,862	445,930,475
Long-term debt.....	\$	126,586,525	128,777,536	221,357,256
Capital stock and surplus.....	\$	131,952,853	141,195,724	159,391,975
Operating revenues.....	\$	129,213,139	133,039,879	133,732,764
Operating expenses.....	\$	124,532,196	127,561,604	129,625,050
Ratio of expenses to revenues.....	p.c.	96.38	95.88	96.93
Employees.....	No.	19,758	19,591	19,119
Salaries and wages.....	\$	74,511,149	76,505,968	78,763,286

**21.—Passengers, Employees and Others Killed or Injured on Urban Transit Systems,
by Cause of Accident and Equipment Involved, 1958**

Item	Passengers		Employees		Others		Total	
	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured
Cause of Accident—	No.	No.	No.	No.	No.	No.	No.	No.
Collision.....	—	297	1	41	23	752	24	1,090
Boarding (excluding door acci- dents).....	—	321	—	8	—	4	—	333
Alighting (excluding door acci- dents).....	—	820	—	19	—	—	—	839
Caught or struck by doors.....	—	366	—	3	—	—	—	369
Accidents on board.....	—	1,813	—	59	—	—	—	1,872
Other.....	—	48	—	251	1	48	1	347
Totals.....	—	3,665	1	381	24	804	25	4,850
Class of Equipment Involved—								
Streetcar.....	—	585	—	33	7	212	7	830
Trolley coach.....	—	624	—	53	4	106	4	783
Motor bus.....	—	2,240	—	114	13	460	13	2,804
Other company equipment.....	—	26	1	27	—	15	1	68
No vehicle.....	—	190	—	154	—	21	—	365

PART III.—ROAD TRANSPORT*

Highways and motor vehicles are herein treated as related features of transportation. An introductory section summarizes provincial regulations regarding motor vehicles and motor traffic.

Section 1.—Provincial Motor Vehicle and Traffic Regulations†

NOTE.—It is obviously impossible to include here the great mass of detailed regulations in force in each province and territory; only the more important general information is given. The source of information for detailed regulations for each province and territory is given at p. 826.

The registration of motor vehicles and the regulation of motor vehicle traffic lies within the legislative jurisdiction of the provincial and territorial governments. Regulations common to all provinces and territories are summarized under the following headings.

Operators' Licences.—The operator of a motor vehicle must be over a specified age, usually 16 years (17 in Newfoundland and Quebec, and 18 in Alberta), and must carry a licence, obtainable in most provinces only after prescribed qualification tests and renewable annually, except in Alberta and British Columbia where it is renewable every five years, and in New Brunswick and Manitoba where it is renewable every two years. Special licences are required for chauffeurs in all provinces except Newfoundland and in some jurisdictions special licences may be granted to those who have not reached the specified age.

Motor Vehicle Regulations.—In general, all motor vehicles and trailers must be registered annually, with the payment of specified fees, and must carry two registration plates, one on the front and one on the back of the vehicle (one only for the back of trailers). In most provinces in event of sale the registration plates stay with the car but in Manitoba and Saskatchewan the plates are retained by the owner. A change of ownership of the vehicle must be recorded with the registration authority. However, exception from registration is granted for a specified period (usually at least 90 days, except in Quebec where the maximum is 90 days and British Columbia where it is six months) in any year to visitors' private vehicles registered in another province or a state that grants reciprocal

* Except as otherwise indicated, the material in this Part has been revised in the Public Finance and Transportation Division, Dominion Bureau of Statistics.

† The information in this Section has been revised from material provided by the officials in charge of the administration of motor vehicle and traffic Acts and Regulations in the individual provinces and territories.

treatment. Regulations require a safe standard of efficiency in the mechanism of the vehicle and of its brakes and stipulate that equipment include non-glare headlights, a proper rear light, a muffler, a windshield wiper, a rear-vision mirror, and a warning device.

Traffic Regulations.—In all provinces and territories, vehicles keep to the right-hand side of the road. Everywhere motorists are required to observe traffic signs, lights, etc., placed at strategic points on highways and roads. The speed limit in Quebec and New Brunswick is 60 miles an hour in daytime and 55 at night, in Manitoba and Alberta it is 60 in daytime and 50 at night, with the exception of a few selected sections of four-lane highways in Alberta where maximum speeds are 65 in daytime and 55 at night. In Nova Scotia the limit is a "reasonable and prudent" speed, with a maximum of 60 miles an hour. In the other provinces the maximum speed permitted is normally 50 miles an hour. Slower speeds are always required in cities, towns and villages, when passing schools and public playgrounds, at road intersections, railway crossings or at other places or times where the view of the highway for a safe distance ahead is in any way obscured. In almost all provinces, truck speed limits are at least five miles an hour below automobile speed limits. In all provinces and territories, accidents resulting in personal injury or property damage of \$100 or more must be reported to a police officer and a driver involved must not leave the scene of an accident until he has rendered all possible aid and disclosed his name to the injured party.

Penalties.—Penalties ascend in scale from small fines for minor infractions of any of the regulations to suspension of the operator's driving permit, impounding of the car, or imprisonment for serious infractions, recklessness, driving without an operator's licence, and especially for attempting to operate a motor vehicle while intoxicated.

Safety Responsibility Legislation.—Each province and the Yukon Territory has enacted legislation under this heading (sometimes referred to as financial responsibility legislation). In general, these laws provide for the automatic suspension of the driver's licence and motor vehicle permit of a person convicted of an offence arising out of a motor vehicle accident, or a person involved directly or indirectly in an accident who is not covered for third-party insurance at the time of the accident. The suspension remains effective until any penalty or judgment has been satisfied and proof of financial responsibility for the future is filed. In Manitoba, Saskatchewan, Alberta, British Columbia, and the Yukon Territory uninsured motor vehicles may be impounded following an accident of any consequence, i.e., an accident resulting in personal injury or death, or property damage in excess of \$100 (\$200 in Saskatchewan and \$250 in British Columbia).

Although safety responsibility legislation has not been enacted in the Northwest Territories, the Motor Vehicle Ordinances there require the owner of a motor vehicle to submit evidence of stipulated insurance coverage on such vehicle before he can obtain registration.

Unsatisfied Judgment Funds.—Legislation has been enacted in all provinces except Quebec and Saskatchewan and in the Territories, usually in the form of an amendment to the motor vehicle laws of the province, providing for the establishment of an Unsatisfied Judgment Fund out of which are paid judgments awarded for damages arising out of motor vehicle accidents in the province which cannot be collected in the ordinary process of law. The Fund is created by the collection annually of an Unsatisfied Judgment Fund fee from the registered owner of every motor vehicle or from every person to whom a driver's licence is issued, except in British Columbia and in Nova Scotia where the Fund is maintained by insurance companies. This fee does not exceed \$1 per annum except that Ontario collects \$5 from each uninsured owner of a motor vehicle at the time of registration. A feature of this legislation which is contained in some provincial statutes provides for the payment of judgments in the so-called 'hit-and-run' accidents. When these occur, if neither the owner nor the driver can be identified, action may be taken against the Registrar of Motor Vehicles; any judgment secured against the Registrar is paid out of the Fund. All of these laws contain a provision limiting the amount that can be paid out of the Fund on one judgment. In Ontario, Alberta and British Columbia the limits are \$10,000 for

one person and \$20,000 for two or more persons injured in one accident. Ontario and Alberta provide for claims up to \$2,000 for property damage. In Manitoba the legal limits are \$10,000, \$20,000 and \$1,000, respectively, while other provinces retain lower limits of \$5,000, \$10,000 and \$1,000. For hit-and-run accidents, payments are made for personal injuries or death only.

Sources of information of provincial motor vehicle and traffic regulations:—

Newfoundland

Administration.—Deputy Minister of Highways, St. John's.

Legislation.—The Highway Traffic Act, 1951, as amended.

Prince Edward Island

Administration.—The Provincial Secretary, Charlottetown.

Legislation.—The Highway Traffic Act (RSPEI 1951, c. 73).

Nova Scotia

Administration.—Registry of Motor Vehicles, Department of Highways, Halifax.

Legislation.—The Motor Vehicle Act (1954, c. 184) as amended, and the Motor Carrier Act (RSNS 1923, c. 78) as amended.

New Brunswick

Administration.—Motor Vehicle Division, Provincial Tax Branch, Department of Provincial Secretary-Treasurer, Fredericton.

Legislation.—The Motor Vehicle Act (RSNB 1955) as amended.

Quebec

Administration.—Motor Vehicle Service, Provincial Revenue Offices, Parliament Bldgs., Quebec.

Legislation.—The Highway Code (RSQ 1941, c. 142) as amended.

Ontario

Administration.—Ontario Department of Transport, Toronto.

Legislation.—The Highway Traffic Act (RSO 1950, c. 167), the Public Vehicles Act (RSO 1950, c. 322) and the Public Commercial Vehicles Act (RSO 1950, c. 304).

Manitoba

Administration.—Minister of Public Utilities, Winnipeg.

Legislation.—The Highway Traffic Act (RSM 1954, c. 112) as amended.

Saskatchewan

Administration.—Treasury Department, Highway Traffic Board, Revenue Building, Regina.

Legislation.—The Vehicles Act, 1957.

Alberta

Administration and Legislation.—The Vehicles and Highway Traffic Act (RSA 1955, c. 356) and the Motor Vehicles Accident Indemnity Act (RSA 1955, c. 209) are administered by the Motor Vehicle Branch, Department of Highways, Edmonton. The Public Service Vehicles Act (RSA 1955, c. 265) and the Rules and Regulations are administered by virtue of authority vested in the Highway Traffic Board, Department of Highways, Edmonton.

British Columbia

Administration and Legislation.—Enforcement of the Motor Vehicle Act, the Commercial Transport Act and the Motor Carrier Act is vested in the Royal Canadian Mounted Police and the various municipal police forces. The Motor Carrier Act is administered by the Public Utilities Commission, the Motor Vehicle Act by the Superintendent of Motor Vehicles and the Commercial Transport Act by the Minister of Commercial Transport, Victoria, B.C.

Yukon Territory

Administration.—Commissioner of the Yukon Territory, Whitehorse, Y.T. Information regarding regulations may also be obtained from the Registrar of Motor Vehicles, Government of the Yukon Territory, Whitehorse, Y.T.

Legislation.—The Motor Vehicles Ordinance (Revised Ordinances 1958, c. 77) and amendments.

Northwest Territories

Administration.—Commissioner of the Northwest Territories. Address communications to the Director, Northern Administration Branch, Department of Northern Affairs and National Resources, Ottawa.

Legislation.—The Motor Vehicles Ordinance (SC 1956, c. 72) as amended.

Section 2.—Highways and Roads

The populated sections of Canada are well supplied with highways and roads. Access to outlying settlements is provided to some extent by roads built by logging, pulp and paper, and mining companies, although these are not generally available for public travel. At the same time, great areas of Newfoundland, Quebec, Ontario, the Prairie Provinces, British Columbia and the Territories are very sparsely settled and are virtually without roads of any kind.

At the end of 1958, the mileage of highways and rural roads in Canada was 401,887. The decrease of 22,052 miles compared with the 1957 total is accounted for by certain exclusions in the later year, as shown in the footnotes to Table 1. The major increase during the year was in bituminous-surfaced highways.

The total of 401,887 miles includes all roads under provincial jurisdiction, federal roads, and local roads under municipal jurisdiction other than the milages in urban centres of more than 1,000 population. The latter are given separately under the heading "Urban Roads", p. 831. Federal roads, including those in the National Parks, the North West Highway System of British Columbia and the Yukon Territory, as well as other federally administered roads in the Yukon and Northwest Territories, totalled 4,217 miles; this figure excludes all Indian reservation roads except those with bituminous surface.

1.—Road Milages classified by Type and by Province, 1957 and 1958

NOTE.—The figures for Canada are the additions of the milages so reported. Urban streets are not included.

Year and Classification	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Canada
	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles	miles
1957												
Surfaced.....	3,319	2,176	9,592	13,128	38,678	66,288	5,393	35,540	40,128	14,654	2,148	231,044
Concrete surface.....	—	13	7	—	226	751	158	—	1	30	—	1,186
Bituminous surface.....	124	327	2,235	2,798	10,059	11,430	1,309	3,125	2,739	3,779	12	37,937
Gravel.....	3,195	1,836	7,350	10,330	28,393	54,107	3,926	32,415	37,388	10,845	2,136	191,921
Earth.....	3,000	1,022	5,735	—	11,518	9,934	15,615	88,954	48,714	8,238	165	192,895
Totals, 1957..	6,319	3,198	15,327	13,128	50,196	76,222	21,008	124,494	88,842	22,892	2,313	423,939
1958												
Surfaced.....	3,609	2,474	9,795	13,168	39,187	67,283	16,038	32,178	41,817	24,706	1,737	251,992
Concrete surface.....	—	14	7	—	196	658	145	—	5	—	—	1,025
Bituminous surface.....	218	425	2,554	3,051	10,742	13,450	1,614	2,056	3,058	3,787	8	40,963
Gravel.....	3,391	2,035	7,234	10,117	28,249	53,175	14,279 ¹	30,122	38,754	20,919	1,729	210,004
Earth.....	3,000	725	5,543	—	11,331	4,733²	5,000	88,820	22,260³	8,225	258	149,895
Totals, 1958..	6,609	3,199	15,338	13,168	50,518	72,016	21,038	120,998⁴	64,077	32,931⁵	1,995⁶	401,887⁶

¹ Includes 9,914 miles previously included with earth road mileage.

² Excludes 4,690 miles unused road allowance previously included.

³ Excludes 23,305 miles unimproved road allowance previously included.

⁴ Decrease from 1957 due to elimination of duplications in reporting.

⁵ Includes roads in Provincial Parks, forest development and mining roads not included previously.

⁶ Excludes milages of all roads on Indian reservations except those with bituminous surface.

Total expenditures on roads and highways reached a new high in the year ended Mar. 31, 1959, amounting to \$772,748,991, 8 p.c. higher than such expenditures in the previous fiscal year. Output on construction was up 8 p.c. and maintenance costs increased almost 18 p.c. Table 2 shows expenditure by provinces and federal-provincial-municipal distribution of such expenditure for the years ended Mar. 31, 1955-59.

2.—Construction, Maintenance and General Expenditure on Rural Roads, Bridges and Ferries, by Province, Years Ended Mar. 31, 1955-59

Item and Province or Territory	1955	1956	1957	1958 ³	1959
	\$	\$	\$	\$	\$
Construction	229,087,011¹	294,436,957¹	421,146,178¹	497,668,898	535,577,276
Newfoundland.....	7,921,808	8,990,495	6,675,115	6,063,686	15,422,240
Prince Edward Island.....	2,795,081	2,911,560	3,746,085	3,378,621	5,442,721
Nova Scotia.....	6,190,634	8,615,147	12,378,093	15,508,597	17,526,726
New Brunswick.....	6,867,169	11,042,564	14,994,989	17,313,315	23,200,007
Quebec.....	58,153,492	76,496,786	84,053,328	94,082,542	121,934,188
Ontario.....	56,762,275	85,171,965	115,855,688	156,094,352	172,480,378
Manitoba.....	12,389,735	12,474,617	18,902,472	21,500,959	25,676,864
Saskatchewan.....	13,390,784	12,682,869	23,611,136	17,497,330	32,177,138
Alberta.....	40,240,306	39,800,420	50,630,485	52,984,501	46,868,117
British Columbia.....	22,128,045	33,283,542	83,598,882	109,098,346	67,897,619
Yukon and N.W.T.....	1,010,545	1,850,116	3,999,750	4,146,649	6,951,278
Maintenance	178,832,011	187,448,444	189,877,569	178,126,885	209,903,710
Newfoundland.....	2,696,832	2,932,427	2,854,937	4,115,203	5,921,000
Prince Edward Island.....	1,159,173	1,588,903	1,257,941	1,345,050	1,634,229
Nova Scotia.....	10,376,255	11,580,407	13,845,101	11,886,596	12,397,624
New Brunswick.....	10,281,339	10,955,460	11,123,134	11,282,258	15,798,997
Quebec.....	35,195,468	35,418,194	41,685,630	43,070,708	53,400,913
Ontario.....	57,464,175	60,591,398	67,049,342	58,158,169	60,143,039
Manitoba.....	3,314,421	3,642,016	4,162,996	4,319,627	4,791,324
Saskatchewan.....	15,517,577	17,159,558	14,429,203	6,613,988	11,708,143
Alberta.....	22,744,792	22,610,892	22,758,513	20,108,685	24,362,277
British Columbia.....	15,493,701	17,164,500	18,000,792	15,442,032	17,088,678
Yukon and N.W.T.....	4,588,278	3,904,689	2,109,980	2,284,569	2,657,576
Administration and General²	21,552,986	31,966,869	40,775,633	19,910,434	24,176,849
Newfoundland.....	347,610	397,452	429,140	120,369	781,277
Prince Edward Island.....	73,268	81,709	62,089	91,212	72,080
Nova Scotia.....	798,905	960,176	961,299	1,243,849	1,774,992
New Brunswick.....	416,716	498,305	567,377	937,314	1,134,982
Quebec.....	3,383,708	3,524,851	3,353,079	2,627,142	3,429,533
Ontario.....	10,958,835	21,135,467	28,657,745	5,866,078	7,347,486
Manitoba.....	801,103	965,426	1,080,353	1,330,759	1,649,152
Saskatchewan.....	1,251,078	1,506,549	1,644,620	2,467,587	2,732,186
Alberta.....	1,259,707	786,560	490,493	1,246,725	905,963
British Columbia.....	1,805,578	1,608,382	2,865,362	3,161,716	3,692,097
Yukon and N.W.T.....	25,476	39,402	496,076	582,683	415,001
Totals	429,472,008	513,852,270	653,567,078³	714,726,805⁴	772,748,991⁵
Distribution of All Expenditure—					
Federal.....	32,775,800	36,644,143	59,887,876	80,731,880	98,199,342
Provincial.....	355,454,863	435,583,891	525,204,516	581,187,652	616,512,226
Municipal.....	37,173,083	40,213,328	48,948,407	51,278,877	55,372,603
Other.....	4,068,262	1,410,908	19,526,279	1,528,396	2,664,820

¹ Includes payments from railways and contributions from the Railway Grade Crossing Fund toward elimination of grade crossings, etc., amounting to \$1,237,237 in 1954-55, \$1,116,876 in 1955-56 and \$2,700,155 in 1956-57.

² Includes federal administrative costs *re* Trans-Canada Highway amounting to \$431,002 in 1954-55, \$462,600 in 1955-56, \$168,000 in 1956-57, \$235,000 in 1957-58 and \$242,100 in 1958-59.

³ Includes expenditures of \$1,767,698 by municipalities in Manitoba for which no breakdown is available.

⁴ Includes expenditures of \$2,573,262 by municipalities in Manitoba, of \$14,932,793 by municipalities in Saskatchewan and of \$1,514,533 by the British Columbia Department of Highways for which no breakdown is available.

⁵ Includes expenditures of \$3,091,156 by municipalities in Manitoba for which no breakdown is available.

The Trans-Canada Highway.—The original federal-provincial agreement for construction of the Trans-Canada Highway is given in outline, together with other data on specifications and proposed route across the participating provinces, in the 1951 Year Book, pp. 631-634. Under the Act, which became effective Dec. 10, 1949, agreements covering the Federal Government's participation in the cost of construction were entered into with each of the provinces (except Quebec). The Act set the standards to be met—a hard-surfaced, two-lane highway, 22 to 24 feet wide with ample shoulder widths, bridge clearances and sight distances, low gradients and curvature, a maximum load capacity of nine tons for one axle, and the elimination, wherever possible, of railway grade crossings. The shortest practicable east-west route was to be designated by each province within its own borders, in agreement on terminal points with adjoining provinces. Those sections within the National Parks were to be the responsibility of the Federal Government. Federal contribution was to be 50 p.c. of the cost of new construction and up to 50 p.c. of the cost of construction of sections of highway built prior to the passing of the Act, where those sections were properly incorporated in the Trans-Canada Highway. Total Federal Government contribution under this Act was limited to \$150,000,000.

An amendment to the Act in 1956 increased the extent of federal financial participation by providing for an additional 40 p.c. contribution on one-tenth of the highway mileage in each province. The construction period was extended to Dec. 31, 1960 and the aggregate limit of federal funds available for the purpose was increased to \$250,000,000. A second amendment passed in March 1959 added \$100,000,000 to the federal contribution and a third amendment passed in June 1960 raised the total amount of funds available for federal expenditure under the Act and its amendments to \$400,000,000. The 1960 amendment also extended for three years the period in which construction costs might be incurred under the Act.

Under present agreements, a paved highway is to be completed across Canada by May 31, 1964—a highway constructed in conformity with the general specifications laid down in the Act or paved to a satisfactory provincial standard. The latter concession was made to eliminate the need for reconstructing highways already paved in order to speed up the work on other sections. However, federal participation in the cost is limited to that portion constructed to Trans-Canada Highway standards.

In the nine participating provinces* the route as amended in 1959 totalled 4,491 miles. In Newfoundland its extent was 554 miles; in Prince Edward Island 71 miles; Nova Scotia 318 miles; New Brunswick 390 miles; Ontario 1,453 miles; Manitoba 309 miles; Saskatchewan 406 miles; Alberta 282 miles; British Columbia 568 miles; and in the National Parks 140 miles. Revisions in location have since made minor alterations in some mileage totals. For instance, the mileage through Mount Revelstoke and Glacier National Parks in British Columbia was shortened by a change of route, and the mileage in Newfoundland lengthened by 63 miles because of a change of location of Terra Nova, the new National Park. Thus National Park mileage has been altered to 143 miles. The sum of \$12,500,000 was allocated by Parliament for construction of the Highway through the National Parks during the year ended Mar. 31, 1959.

Contractual commitments of the nine participating provinces for new construction on the Highway up to February 1960 amounted to \$540,588,823, of which the federal share, including the additional 40 p.c. under the amended Act, was \$322,852,148. Federal payments to the provinces during this period for prior, interim and new construction totalled \$302,737,183. On-site labour expended on the Highway up to Mar. 31, 1959 was 7,976,220 eight-hour man-days of employment; off-site employment required for the provision of necessary material and services was estimated at 13,559,574 man-days.

In Saskatchewan, work was completed over the whole route of 406 miles in 1957 and the Highway was officially opened and dedicated on Aug. 21 of that year. In provinces more handicapped by problems of terrain and construction, progress was reported: at

* The Provincial Government of Quebec is not a party to a federal-provincial agreement but there is a paved highway across that province linking the two ends of the Trans-Canada Highway route in Ontario and New Brunswick.

Dec. 31, 1959, contracts for 3,290 miles of grading had been approved and the equivalent of 3,045 miles built; contracts for base-course had been approved for 3,000 miles and the equivalent of 2,731 miles completed; paving to specified standards had been completed over a distance of 2,373 miles; 448 bridges, overpasses and other structures of more than 20-foot span had been approved for construction.

Roads to Resources and Roads in the North.—Canada's ranking resources are often the hardest to reach. The richest mineral discoveries do not occur close to the main highways; roads must reach out to them. Access to the most valuable timber stands is almost always provided by roads built expressly for that purpose. The main freshwater fisheries do not operate next door to supermarkets. Indeed, few countries have more to gain from the provision resource roads than Canada.

This was the thinking behind the Roads to Resources program proposed by the Federal Government to the provinces early in 1958. The Federal Government at that time offered to contribute \$7,500,000 to each province for the construction of resource roads if the province would contribute the same amount. The program was not intended at any point to replace a province's normal highway commitments but to assist it with road construction which it otherwise could not undertake. The initiative in proposing routes was to lie with the provinces and they were to be responsible for construction and maintenance. No single time-ceiling was established, since the programs in each province would differ and obviously some would require more time than others. Projects submitted by the provinces were to be studied by the Interdepartmental Roads Appraisal Committee, a small continuing body set up to advise the Minister of Northern Affairs and National Resources. The provinces were keenly interested in the program and all have since signed Roads to Resources agreements and have programs in operation.

Excellent progress was made during 1960 and, by mid-summer, work to the value of more than \$26,000,000 had been done since the beginning of the program. To this amount, each partner concerned—federal and provincial—made equal contribution. The entire program calls for a joint investment of \$150,000,000 which will finance the construction of more than 4,000 miles of road to benefit the mining, forestry and commercial fishing (both inland and sea) industries and tourism. The significance of this mileage is indicated by the realization that if these resource roads were built as a single east-west route, that route would almost link the capital of Newfoundland with the capital of British Columbia.

Concurrently with the Roads to Resources program, the Federal Government is carrying out a Territorial Development Road program in the Yukon and Northwest Territories. These roads, to be constructed through promising resource areas, will link up with and form part of the existing Territorial roads system. The program envisages the construction of more than 1,200 miles of road and a number of bridges at an estimated cost of some \$70,000,000. Such trunk roads through promising areas will provide the travel surfaces over which equipment for resource development, construction workers and settlers will pass. Most of them are to be financed entirely by the Federal Government although the Territorial Governments will pay a share of the maintenance costs. However, where an access road leads from a development road to link up with an individual mine or other similar type of company operation, its cost may be shared by the Government and the company. The development roads are primarily designed to reach new mineral sources, particularly oil and gas.

Although two programs, Roads to Resources and Territorial Development Roads, are distinct—their location and method of financing make this clear—they are nevertheless related. In the western provinces most roads to be built under the first program will lie within, or head towards, the northern part of the province and so towards the 60th parallel of latitude. The Territorial program has been planned so that, in time, the new roads being built in the North will connect with the resource roads in the provinces.

An example already exists at the Alberta-Northwest Territories boundary. Here the provincial highway from Grimshaw, being improved as part of Alberta's Roads to Resources program, meets the federal Mackenzie Highway and forms one continuous road into the Northwest Territories.

The most important single project in the Northwest Territories is the extension of the Mackenzie Highway some 280 miles around the west end of Great Slave Lake to Yellowknife. This will give access to the highly mineralized area around Great Slave Lake and provide, as well, an overland route to Yellowknife. In the Yukon, development roads will give improved access to mineralized areas including access to the Eagle Plain oil reservation where a major oil discovery was made in 1959 and large-scale exploration is being conducted.

Urban Roads.—Information on urban roads is obtained from urban authorities in places with populations of over 1,000. Brief statistical data are given in Table 3; more detail may be obtained from DBS annual report *Road and Street Mileage and Expenditure* (Catalogue No. 53-201).

3.—Statistics of Urban Roadways, 1956-58

Item		1956	1957	1958
Authorities Reporting	No.	799	806	826
Total Expenditure Reported	\$	106,117,610	124,827,755	135,000,705
New construction.....	\$	45,543,596	52,208,448	52,928,897
Reconstruction, repair, cleaning, sanding and snow removal	\$	60,574,014	72,619,307	82,071,808
Total Urban Mileage	No.	22,823	24,841	25,652
Rigid pavement.....	"	6,049	5,239	5,659
Flexible pavement.....	"	5,507 ^r	8,121	8,504
Gravel and other surfaces.....	"	9,132 ^r	9,581	9,741
Earth.....	"	2,135	1,900	1,748

Section 3.—Motor Vehicles

Registration.—Motor vehicle registrations continue to increase year by year, reaching a record of 4,719,474 in 1958 compared with 4,497,091 in 1957 and 2,034,943 in 1948. Of the total in 1958, 3,572,963 were for passenger cars—one for every five Canadians. Registrations by province are given in Table 4 and types of vehicles registered by province in Table 5.

4.—Motor Vehicles Registered, by Province, 1949-58

NOTE.—Registrations given here include passenger cars, trucks, buses, motorcycles, service cars, etc., but not trailers or dealer licences. Figures for 1904-48 are given in the corresponding table of previous Year Books beginning with the 1937 edition.

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total ¹
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1949.....	13,981	13,211	83,443	67,280	384,733	970,137	139,836	185,027	200,428	230,008	2,290,628
1950.....	16,375	15,383	94,743	74,415	433,701	1,104,080	157,788	199,866	230,624	270,312	2,600,511
1951.....	20,058	16,896	105,262	83,023	500,729	1,205,098	171,265	215,450	259,841	291,417	2,872,420
1952.....	23,630	18,717	114,982	89,839	574,974	1,291,753	187,881	237,014	291,469	321,482	3,155,824 ^r
1953.....	29,576	20,286	129,564	93,914	617,855	1,406,119	203,652	257,504	318,812	348,830	3,430,672
1954.....	34,423	20,848	133,087	99,058	674,114	1,489,980	210,471	267,373	338,541	371,711	3,644,589
1955.....	39,766	22,145	149,841	106,648	743,682	1,617,853	222,474	274,950	356,839	469,343	3,948,652
1956.....	45,997	23,373	157,544	111,315	844,827	1,710,240	240,008	291,265	381,153	454,217	4,265,437
1957.....	47,982	23,725	164,286	116,712	901,065	1,793,499	246,188	300,326	405,229	491,884	4,497,091
1958.....	51,575	25,504	164,954	121,715	968,058	1,868,922	256,064	314,423	430,081	510,893	4,719,474

¹ Includes registrations in the Yukon and Northwest Territories.

5.—Types of Motor Vehicles Registered, by Province, 1957 and 1958

Year and Province or Territory	Passenger Cars ¹	Commercial Cars, Trucks, etc. ²	Buses	Motor-cycles	Total
	No.	No.	No.	No.	No.
1957^c					
Newfoundland.....	34,361	13,175	158	288	47,982
Prince Edward Island.....	14,595	8,994	10	126	23,725
Nova Scotia.....	118,216	44,324	707	1,039	164,286
New Brunswick.....	86,518	28,773	504	917	116,712
Quebec.....	677,336	206,427	4,262	13,040	901,065
Ontario.....	1,431,438	345,961	4,578	11,522	1,793,499
Manitoba.....	182,555	61,832	199	1,602	246,188
Saskatchewan.....	186,543	112,991	129	663	300,326
Alberta.....	276,679	123,474	3,084	1,992	405,229
British Columbia.....	371,727	116,443	^a	3,714	491,884
Yukon and N.W.T.....	3,451	2,702	35	7	6,195
Canada, 1957.....	3,383,419	1,065,096	13,666	34,910	4,497,091
1958					
Newfoundland.....	37,014	14,119	162	280	51,575
Prince Edward Island.....	15,860	9,519	8	117	25,504
Nova Scotia.....	119,569	43,637	745	1,003	164,954
New Brunswick.....	91,428	28,900	494	893	121,715
Quebec.....	734,403	215,908	4,854	12,893	968,058
Ontario.....	1,492,039	361,891	4,844	10,148	1,868,922
Manitoba.....	190,964	63,400	201	1,499	256,064
Saskatchewan.....	199,495	113,685	527	716	314,423
Alberta.....	294,910	129,604	3,293	2,274	430,081
British Columbia.....	393,337	113,515	^a	4,041	510,893
Yukon and N.W.T.....	3,944	3,279	53	9	7,285
Canada, 1958.....	3,572,963	1,097,457	15,181	33,873	4,719,474

¹ Includes taxis.² Includes service cars, road tractors, etc.³ Included with trucks.

Apparent Supply of Automobiles.—The apparent supply of automobiles in Canada in any year is computed by deducting the number exported from the sum of the production and imports. Statistics regarding retail sales and the financing of motor vehicle sales are given in Chapter XX on Domestic Trade and Prices.

6.—Apparent Supply of New Automobiles, 1949-58

Year	Cars Made for Sale in Canada ¹		Car Imports		Re-exports of Imported Cars		Apparent Supply	
	Pas-senger	Com-mercial ²	Pas-senger	Com-mercial	Pas-senger	Com-mercial	Pas-senger	Com-mercial ²
	No.	No.	No.	No.	No.	No.	No.	No.
1949.....	177,060	85,715	35,293	3,404	32	8	212,321	89,111
1950.....	259,481	96,826	81,722	6,806	62	20	341,141	103,612
1951.....	243,155	105,547	42,631	5,703	2,866	11	282,920	111,239
1952.....	245,443	112,485	35,665	4,328	999	11	280,109	116,802
1953.....	319,937	100,772	53,179	5,296	44	3	373,072	106,065
1954.....	267,452	59,666	38,509	4,973	84	25	305,877	64,614
1955.....	349,306	69,186	48,546	9,403	22	24	397,830	78,565
1956.....	349,809	85,094	76,200	13,032	45	42	425,964	98,084
1957.....	318,416	64,857	70,796	9,215	65	39	389,147	74,033
1958.....	280,677	55,908	104,195	9,182	190	8	384,682	65,082

¹ Factory shipments since 1952.² Includes Armed Forces vehicles.

Provincial Government Revenue from Motor Vehicles.—The taxation of motor vehicles, garages, drivers, chauffeurs, etc., is an important source of provincial government income. In every province licences or permits duly issued by the provincial authorities are required for motor vehicles of all kinds, trailers, operators or drivers, paid chauffeurs, dealers, garages and gasoline and service stations. In 1958 the average cost per motor vehicle for operating taxes and licences was about \$107. Lower gasoline tax rates in the five provinces from Ontario westward brought the averages for those provinces below the national average. Present gasoline tax rates range from one cent per gallon in the North-west Territories to 17 cents in Newfoundland and Nova Scotia.

The more important sources from which provincial revenue from motor vehicles is derived are shown in Table 7. Federal Government revenue from import duties, excise and sales taxes are given in Chapter XXII on Public Finance.

7.—Provincial Revenue from the Registration and Operation of Motor Vehicles, by Province, Years Ended Mar. 31, 1958 and 1959

Year and Province or Territory	Passenger Automobile Licences	Truck, Bus, Trailer and other Vehicle Licences	Motorcycle Licences	Chauffeur, Driver and Dealer Licences	Public Service Vehicle Tax	Gasoline Tax	Total ¹
	\$	\$	\$	\$	\$	\$	\$
1958							
Newfoundland.....	599,822	632,940	2,421	172,857	2	4,054,881	5,600,704
Prince Edward Island..	250,971	276,982	478	62,334	3,245	1,883,246	2,484,959
Nova Scotia.....	2,225,978	2,107,544	3	348,537	34,410	13,801,492	18,795,437
New Brunswick.....	1,759,840	1,920,466	5,206	299,959	49,237	10,892,134	15,117,621
Quebec.....	15,398,144	13,945,852	49,552	2,834,312	981,584	84,727,249	119,060,848
Ontario.....	22,213,824	23,459,631	35,389	2,719,805	2,630,372	143,218,806	196,859,095
Manitoba.....	2,866,077	1,344,185	6,610	701,619	1,185,787	13,326,896 ²	19,592,011 ²
Saskatchewan.....	2,623,436	2,257,518	4	406,645	934,324	18,944,253	25,790,981
Alberta.....	4,010,546	6,010,924	5	2,211,376	176,106	23,902,404	37,072,275
British Columbia.....	7,376,798	4,523,549	16,873	661,118	684,859	25,642,375	39,539,463 ³
Yukon and N.W.T.....	42,906	33,813	20	19,438	35,830	268,821	406,127
Totals, 1958.....	59,368,342	56,513,404	116,549	10,438,500	6,715,754	340,662,557	480,319,521²
1959							
Newfoundland.....	641,366	677,990	2,320	187,430	611	4,651,523	6,338,562
Prince Edward Island..	273,249	303,167	432	65,593	3,725	2,186,929	2,841,355
Nova Scotia.....	2,344,429	2,109,328	3	358,974	31,599	14,526,162	19,657,907
New Brunswick.....	1,857,231	1,930,859	5,036	313,715	47,665	11,445,325	15,802,440
Quebec.....	16,795,898	14,418,034	51,572	2,997,110	1,003,107	88,787,601	125,274,866
Ontario.....	23,819,556	25,828,789	47,192	2,798,150	2,827,040	151,389,717	209,342,718
Manitoba.....	3,033,943	1,428,391	6,581	133,889	1,275,471	14,162,444	20,219,180
Saskatchewan.....	2,917,260	3,284,705	4	401,272	—	19,924,190	27,300,213
Alberta.....	4,384,745	6,252,577	5	279,978	206,098	24,468,867	36,399,921
British Columbia.....	7,890,246	4,544,716	18,214	572,515	562,453	26,602,573	40,872,215
Yukon and N.W.T.....	46,888	48,392	20	20,205	28,487	265,568	419,550
Totals, 1959.....	64,004,861	60,826,938	131,367	8,128,831	5,986,256	358,410,899	504,468,927

¹ Includes other items not shown such as transfer of motor vehicles, garage and service station licences, and fines for infractions of motor vehicle laws. ² Included with trucks. ³ Included with other motor vehicles. ⁴ Included with miscellaneous revenues and therefore in total. ⁵ Included with passenger automobiles.

Sales of Gasoline.—Gasoline and diesel oil used as fuel in internal combustion engines are taxed when used by motor vehicles on highways. In some provinces they are taxed when used for other purposes. Liquefied petroleum gas when used in motor buses and trucks is considered as "gasoline". The consumption of taxable gasoline, which is used almost entirely for automotive purposes, rose 4.0 p.c. to 2,732,000,000 gal. in 1958. All provinces showed increases. Sales by province are shown in Table 8. Net sales are calculated by deducting from the gross sales (1) tax-exempt sales, (2) gasoline on which refunds have been paid, and (3) exports.

8.—Sales of Gasoline, by Province, 1954-58

Province or Territory	1954 ¹	1955 ¹	1956 ¹	1957	1958
	gal.	gal.	gal.	gal.	gal.
Newfoundland.....	18,818,942	21,534,679	24,242,239	25,526,674	28,026,795
Prince Edward Island.....	12,782,733	13,751,121	14,325,068	14,293,703	16,152,969
Nova Scotia.....	80,518,367	86,499,272	91,133,927	94,852,532	99,662,302
New Brunswick.....	78,065,848	75,076,615	81,177,965	83,717,829	95,159,403
Quebec.....	484,868,758	545,070,050	611,828,946	660,810,503	721,348,397
Ontario.....	991,397,120	1,099,962,376	1,198,568,793	1,237,723,059	1,295,797,122
Manitoba.....	162,578,296	188,284,222	200,314,027	219,559,349	225,700,542
Saskatchewan.....	244,370,743	262,201,711	269,661,903	280,457,734	286,607,918
Alberta.....	388,929,549	353,924,513	383,609,186	402,560,725	442,191,585
British Columbia.....	235,670,948	256,166,048	298,957,204	324,972,114	325,269,939
Yukon and N.W.T.....	—	—	4,245,811 ²	4,734,949 ²	8,939,770
Totals, Gross Sales.....	2,698,001,304	2,902,470,607	3,178,065,069	3,349,209,171	3,544,856,742
Refunds and exemptions.....	676,998,846	675,490,362	721,076,713	723,118,141	812,898,257
Totals, Net Sales.....	2,021,002,458	2,226,980,245	2,456,988,356	2,626,091,030	2,731,958,485

¹ Exports included in net sales.² Yukon only.

Motor Carriers—Freight.*—Statistics of the common carrier segment of the intercity and rural motor carrier industry have been collected since 1941. However, as little capital is required to enter the trucking business, many marginal operators are associated with the industry and the large turnover and numerous changes each year have created many problems in the collection of statistics; these are gradually being overcome. Statistics of contract carriers were collected for the first time in 1958. The 3,510 common carrier firms from which usable returns were secured in 1958 reported gross operating revenues of \$292,719,406 compared with 2,062 firms reporting \$259,056,237 in 1957. Usable returns for contract carriers reported a gross operating revenue of \$59,361,113.

Both groups of the motor carrier freight industry are divided into four classes based on gross annual revenue. Operators of vehicle fleets owned and operated by private companies, where the vehicles are not available for public service, such as dairies, bakeries, departmental and grocery stores, oil and gasoline distributors and breweries, are excluded.

* Statistics are given in more detail in DBS annual report *Motor Carriers—Freight* (Catalogue No. 53-205).

9.—Summary Statistics of Motor Carriers—Freight, 1956-58

Item		Common			Contract
		1956	1957	1958	1958
Carriers Reporting.....	No.	2,531	2,062	3,510	1,189
Investments—Land, Buildings, Equip-					
ment, etc.....	\$	162,424,006	180,278,104	199,403,189	42,801,909
Operating Revenue.....	\$	233,510,896	259,056,237	292,719,406	59,361,113
Freight—					
Intercity and rural.....	\$	225,714,357	250,667,972	280,101,660	55,220,812
City.....	\$	2,595,265	4,153,112	5,103,774	1,942,047
Other.....	\$	5,201,274	4,235,153	7,513,972	2,198,254
Operating Expenditure.....	\$	215,202,580	244,836,400	274,447,130	54,229,139
Maintenance.....	\$	39,205,670	42,138,666	39,654,694	9,341,683
Wages and bonuses of drivers and helpers.....	\$	55,867,679	59,975,209	63,058,397	12,266,936
Other transportation expenditure.....	\$	58,701,995	66,210,999	104,606,099 ¹	22,577,355 ¹
Operating taxes and licences.....	\$	15,903,382	17,783,858	9,103,417	1,790,172
Other operating expenditure.....	\$	45,523,854	58,727,668	58,024,523	8,253,093

For footnote, see end of table.

9.—Summary Statistics of Motor Carriers—Freight, 1956-58—concluded

Item	Common			Contract
	1956	1957	1958	1958
Net Operating Revenue..... \$	18,308,316	14,219,837	18,272,276	5,131,974
Traffic and Employees—				
Freight carried..... ton	22,559,282 ²	21,198,431 ²	31,948,000 ²	21,830,000 ²
Fuel Consumed—				
Gasoline..... gal.	61,005,801 ²	63,353,134 ²	76,853,000	19,219,000
Diesel oil..... "	11,612,037	11,693,667	16,995,000	1,906,000
Liquefied petroleum gases..... "	465,821	121,813	19,000	19,000
Working proprietors..... No.	2,342	1,786	3,290	1,081
Allowances of working proprietors..... \$	5,638,504	5,009,966	7,561,587	3,217,342
Employees—				
Average employed during year..... No.	24,733	26,338	26,210	4,634
Total salaries and wages..... \$	84,425,689	97,457,289	103,950,714	17,754,268
Equipment—				
Trucks..... No.	8,870	8,904	11,756	3,140
Road tractors..... "	6,416	8,205	8,580	1,816
Semi-trailers..... "	10,710	11,614	12,708	2,071
Trailers..... "	395	309	567	184
Trucks with diesel engines..... "	94	60	225	75
Road tractors with diesel engines..... "	1,355	1,538	1,834	228

¹ Includes fuel taxes previously included in "Operating taxes and licences" and rents previously included in "Other operating expenditure".

² Excludes carriers with annual gross revenue of less than \$20,000.

10.—Statistics of Motor Carriers—Freight, classified by Type and Revenue Group, 1958

Item	Carriers with Annual Gross Revenue of—			
	Over \$500,000	\$100,000 to \$499,999	\$20,000 to \$99,999	\$19,999 or Under
Common Carriers				
Carriers Reporting..... No.	110	231	677	2,492
Cost of Land, Buildings, Equipment, etc.... \$	131,165,987	31,770,434	20,276,556	16,190,212
Operating Revenue..... \$	195,620,000	49,816,932	30,035,013	17,247,461
Freight..... \$	191,076,965	47,795,312	29,234,756	17,098,401
Other..... \$	4,543,035	2,021,620	800,257	149,060
Operating Expenditure..... \$	186,986,431	47,183,681	26,768,226	13,508,792
Net Operating Revenue..... \$	8,633,569	2,633,251	3,266,787	3,738,669
Traffic—				
Freight carried ¹ ton	15,654,000	8,226,000	8,068,000	..
Fuel Consumed—				
Gasoline..... gal.	43,831,000	14,245,000	10,435,000	8,342,000
Diesel oil..... "	14,232,000	2,276,000	487,000	—
Liquefied petroleum gases..... "	17,000	—	2,000	—
Working proprietors..... No.	2	47	621	2,620
Allowances of working proprietors..... \$	22,200	318,762	2,866,644	4,353,981
Contract Carriers				
Carriers Reporting..... No.	17	100	324	734
Cost of Land, Buildings, Equipment, etc.... \$	12,374,288	15,440,990	9,573,906	5,412,725
Operating Revenue..... \$	18,411,007	20,091,423	14,325,304	6,533,379
Freight..... \$	17,315,828	19,377,519	13,895,192	6,474,320
Other..... \$	1,095,179	713,904	330,112	59,059

¹ Incomplete coverage.

10.—Statistics of Motor Carriers—Freight, classified by Type and Revenue Group, 1958 —concluded

Item	Carriers with Annual Gross Revenue of—			
	Over \$500,000	\$100,000 to \$499,999	\$20,000 to \$99,999	\$19,999 or Under
Contract Carriers—concluded				
Operating Expenditure..... \$	17,898,485	19,061,050	12,420,276	4,849,328
Net Operating Revenue..... \$	512,522	1,030,373	1,905,028	1,684,051
Traffic—				
Freight carried ¹ ton	10,413,000	4,831,000	6,586,000	..
Fuel Consumed—				
Gasoline..... gal.	5,128,000	5,828,000	5,304,000	2,959,000
Diesel oil..... "	482,000	1,027,000	335,000	62,000
Liquefied petroleum gases..... "	—	—	19,000	—
Working proprietors..... No.	—	15	284	782
Allowances of working proprietors..... \$	—	84,759	1,531,663	1,600,920

¹ Incomplete coverage.

Passenger Buses.*—As explained on p. 822, since 1956 the operations of motor carrier companies predominantly engaged in passenger bus service have been given separately; they are summarized in Tables 11 and 12. Data refer to the for-hire segment of the industry and only those firms engaged in intercity and rural operations and having an annual gross revenue exceeding \$6,000 are covered. Operators predominantly involved in the provision of charter or school bus service are not included.

* Statistics are given in more detail in DBS monthly and annual reports *Passenger Bus Statistics* (Catalogue No. 53-216).

11.—Summary Statistics of Intercity and Rural Passenger Bus Companies, 1955-58

NOTE.—Only carriers with an annual gross revenue of over \$6,000 are included.

Item	1955	1956	1957	1958
Carriers Reporting..... No.	201	149	136	154
Cost of Land, Buildings, Equipment, etc..... \$	57,491,424	57,081,464	57,834,081	59,213,624
Revenue..... \$	47,685,668	47,714,152	47,250,757	46,787,640
Regular Passenger Service—				
Intercity and rural..... \$	39,936,526	39,948,106	39,277,877	37,930,050
City..... \$	1,455,193	1,269,769	1,285,710	1,771,348
Chartered passenger service..... \$	2,937,411	3,077,207	3,219,334	3,641,525
Other motor carrier..... \$	3,356,538	3,419,070	3,467,836	3,444,717
Operating Expenditure..... \$	44,956,475	43,879,782	43,404,424	43,005,593
Maintenance..... \$	11,246,456	11,311,170	10,078,321	9,172,354
Wages and bonuses of drivers and helpers..... \$	10,002,390	9,829,337	9,808,732	10,470,104
Other transportation expenditure..... \$	11,238,544	10,591,089	10,867,088	10,213,088
Operating taxes and licences..... \$	3,966,360	3,737,614	3,571,718	3,569,911
Other operating expenditure..... \$	8,502,725	8,410,572	9,078,565	9,580,136
Net Operating Revenue..... \$	2,729,193	3,834,370	3,846,333	3,782,047
Traffic and Employees—				
Passengers—				
Regular Routes—				
Intercity and rural..... No.	72,940,800	65,261,484	54,447,010	51,578,248
City..... "	13,839,511	9,112,942	13,304,475	12,581,592
Special and chartered service..... "	5,377,406	2,789,702	2,650,478	4,696,157

11.—Summary Statistics of Intercity and Rural Passenger Bus Companies, 1955-58 —concluded

Item		1955	1956	1957	1958
Traffic and Employees—concluded					
Bus Miles—					
Regular Routes—					
Intercity and rural.....	No.	94,262,207	90,825,349	83,898,345	83,319,763
City.....	"	2,807,175	2,998,468	3,787,702	4,219,187
Special and chartered service.....	"	5,609,432	5,961,287	5,702,492	6,066,251
Gasoline consumed.....	gal.	13,138,869	10,017,975	8,578,183	6,903,530
Diesel oil consumed.....	"	4,248,191	5,025,200	5,626,623	7,012,014
Working proprietors.....	No.	117	82	66	55
Allowances of working proprietors.....	\$	315,405	194,731	184,065	187,797
Employees—					
Average employed during year.....	No.	5,895	5,481	5,326	5,156
Total salaries and wages.....	\$	19,269,704	19,141,672	19,355,124	20,333,995
Equipment—					
Buses.....	No.	2,629	2,198	2,115	2,300
Gasoline.....	"	2,082	1,661	1,550	1,432
Diesel.....	"	547	637	765	863

12.—Statistics of Intercity and Rural Passenger Bus Companies, classified by Revenue Group, 1957 and 1958

Year and Item		Companies with Annual Gross Revenue of—		
		\$100,000 or More	\$20,000 to \$99,999	\$6,000 to \$19,999
1957				
Carriers Reporting.....	No.	45	44	47
Cost of Land, Buildings, Equipment, etc.....	\$	54,438,062	2,833,396	562,623
Revenue.....	\$	44,550,475	2,200,840	499,442
Passenger.....	\$	41,446,256	1,895,161	441,504
Other.....	\$	3,104,219	305,679	57,938
Operating Expenditure.....	\$	40,886,035	2,103,535	414,854
Net Operating Revenue.....	\$	3,664,440	97,305	84,588
Traffic—				
Passengers.....	No.	65,979,215	3,598,722	824,026
Bus miles.....	"	86,662,157	4,965,589	1,760,793
Gasoline consumed.....	gal.	7,417,844	920,639	239,700
Diesel oil consumed.....	"	5,599,452	26,064	1,107
Working proprietors.....	No.	3	19	44
Allowances of working proprietors.....	\$	22,406	78,010	83,649
1958				
Carriers Reporting.....	No.	44	48	62
Cost of Land, Buildings, Equipment, etc.....	\$	55,380,582	2,914,752	918,283
Revenue.....	\$	43,753,846	2,363,356	670,438
Passenger.....	\$	40,585,585	2,159,806	597,532
Other.....	\$	3,168,261	203,550	72,906
Operating Expenditure.....	\$	40,141,905	2,214,712	648,976
Net Operating Revenue.....	\$	3,611,941	148,644	21,462
Traffic—				
Passengers.....	No.	62,275,645	5,408,458	1,171,894
Bus miles.....	"	86,025,781	5,091,620	2,487,800
Gasoline consumed.....	gal.	5,701,429	895,004	307,097
Diesel oil consumed.....	"	6,976,832	22,151	13,031
Working proprietors.....	No.	2	13	40
Allowances of working proprietors.....	\$	9,200	100,177	78,420

Motor Transport Traffic.*—Surveys of motor transport traffic have been conducted in all provinces on a continuing basis since 1957 by means of random samples of vehicles selected from provincial registration records. Approximately 3 p.c. of total registrations were sampled for surveys of truck operations during each quarter of 1958. Commencing with the second quarter of that year, each quarterly sample was spread over three survey weeks with one-third of the sample being used for a seven-day period (Sunday through Saturday) per month.

Excluding vehicles that do not perform normal transportation services, such as cranes, tow trucks, road building equipment, etc., the average number of trucks licensed in Canada during the year 1958 was 862,775. Of these, 5.9 p.c. were for-hire carriers, 23.8 p.c. were private intercity trucks, 35.9 p.c. were private trucks operated predominantly within urban areas, and 34.4 p.c. were farm trucks. One-third of the total number were registered in Ontario and one-half were registered in the two provinces of Ontario and Quebec.

13.—Average Truck Population, by Type of Operation and Province, 1958

Type of Operation	Atlantic Provinces	Quebec	Ontario	Manitoba	Saskat- chewan	Alberta	British Columbia	Canada
	No.	No.	No.	No.	No.	No.	No.	No.
For-hire.....	2,523	13,461	16,763	1,329	1,685	9,441	5,301	50,503
Private—								
Intercity.....	36,093	32,818	73,192	2,553	11,125	16,050	33,792	205,623
Urban.....	17,004	71,685	127,701	21,063	9,095	24,037	39,043	309,628
Farm.....	13,270	35,501	62,646	29,783	79,065	65,016	11,740	297,021
Totals.....	68,890	153,465	280,302	54,728	100,970	114,544	89,876	862,775

Canadian registered trucks travelled 6,616,000,000 miles in Canada during the year, of which mileage 20 p.c. was accounted for by for-hire trucks, 33 p.c. by private intercity vehicles, 32 p.c. by urban trucks and 15 p.c. by farm trucks, the most numerous of all vehicles.

For-hire trucks averaged 184,700 net ton-miles per vehicle and, although amounting to only 5.9 p.c. of total registrations, they accounted for 60 p.c. of the total net ton-miles performed by all commercial trucks in Canada, a result of the comparatively high average yearly mileage of for-hire trucks and also of the heavier average load carried (9.9 tons as compared with an average of 4.7 tons for all trucks). The predominance of heavier vehicles in the for-hire group also explains the low mileage per gallon of gasoline of 6.3 as compared with an average of 9.7 for all vehicles.

* Statistics are given in more detail in DBS annual reports *Motor Transport Traffic Statistics* for Canada and the provinces (Catalogue Nos. 53-207—53-214).

14.—Summary Statistics of Truck Traffic, by Type of Operation, 1958

Item		For-Hire	Private			Total
			Intercity	Urban	Farm	
Miles per gallon of gasoline.....	No.	6.3	9.9	11.1	12.7	9.7
Average weight of goods carried.....	ton	9.9	4.3	1.5	1.5	4.7
Average net ton-miles per truck.....	No.	184,700	21,000	5,100	1,500	18,100
Capacity utilized.....	p.c.	53.0	41.3	31.9	24.1	45.0
Average gross ton-miles per truck.....	No.	371,500	57,100	21,700	9,100	46,300
Mileage Travelled—	'000,000 miles					
Newfoundland.....		7	34	12	3	56
Prince Edward Island.....		2	13	4	12	31
Nova Scotia.....		16	130	47	27	220
New Brunswick.....		9	106	33	22	170
Quebec.....		292	466	540	136	1,434
Ontario.....		521	841	855	231	2,448
Manitoba.....		64	39	151	80	334
Saskatchewan.....		69	128	48	218	463
Alberta.....		231	175	157	234	797
British Columbia.....		88	274	244	57	663

Motor Vehicle Accidents.—Motorists are required by law to report accidents but complete statistics of these accidents are not available for all provinces. Statistics on all deaths from motor vehicle accidents are shown in Table 15. A direct comparison of such statistics between the provinces is of little value because of differences in size, population, motor vehicle density, etc., but, to put them on somewhat the same basis, the average number of deaths per 10,000 registered motor vehicles has been tabulated. These data still give no weight to differences in use of motor vehicles, variations in climate, road conditions, tourist cars, etc., all of which are factors in accidents.

Data presented in Table 16 relate to traffic accidents only and consequently may not be compared with figures of Table 15 which include details of fatalities occurring elsewhere than on public streets or roads.

15.—Deaths Resulting from Motor Vehicle Traffic and Non-traffic Accidents, by Province, 1949-58

NOTE.—Figures for 1926-48 are given in the corresponding table of previous Year Books beginning with the 1941 edition.

Year	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
DEATHS BY PLACE OF OCCURRENCE											
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1949.....	—	11	102	96	645	873	105	85	172	176	2,265
1950.....	18	7	94	103	682	850	75	91	162	188	2,270
1951.....	26	20	103	122	818	991	102	93	184	227	2,686
1952.....	25	26	115	139	931	1,067	112	131	188	223	2,957
1953.....	28	14	133	124	959	1,119	111	153	261	219	3,121
1954.....	33	14	149	131	769	1,096	132	86	215	232	2,857
1955.....	47	18	121	147	894	1,177	104	133	203	235	3,079
1956.....	46	17	150	150	1,057	1,245	160	138	269	312	3,544
1957.....	39	14	141	162	1,179	1,341	151	155	253	259	3,694
1958.....	46	20	155	156	1,106	1,150	139	139	312	287	3,510
DEATHS PER 10,000 REGISTERED MOTOR VEHICLES											
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1949.....	—	8.33	12.22	14.27	16.76	9.00	7.51	4.59	8.58	7.65	9.89
1950.....	10.99	4.55	9.92	13.84	15.73	7.70	4.75	4.55	7.02	6.95	8.74
1951.....	12.96	11.84	9.78	14.69	16.34	8.22	5.96	4.32	7.08	7.79	9.36
1952.....	10.53	13.89	10.00	15.47	16.19	8.26	5.96	5.53	6.45	6.94	9.37
1953.....	9.47	6.90	10.26	13.20	15.52	7.96	5.45	5.94	8.19	6.28	9.10
1954.....	9.59	6.71	11.19	13.22	11.41	7.35	6.27	3.22	6.35	6.24	7.84
1955.....	11.82	8.13	8.15	13.78	12.02	7.28	4.67	4.84	5.69	5.74	7.81
1956.....	10.00	7.27	9.52	13.48	12.51	7.28	6.67	4.74	7.06	6.87	8.32
1957.....	8.13	5.90	8.58	13.88	13.08	7.48	6.13	5.16	6.24	5.27	8.23
1958.....	8.92	7.84	9.40	12.82	11.42	6.15	5.43	4.42	7.25	5.62	7.45

16.—Motor Vehicle Traffic Accidents, by Province, 1958

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Accidents Reported.....	3,224	927	8,801	5,692	62,869	76,884	11,761	11,351	21,045	24,583	374	227,451
Fatal—												
Resulting in death of one or more persons.....	41	18	135	134	694	965	102	120	217	246	1	2,673
Non-fatal—												
Resulting in injury to one or more persons.....	762	203	1,815	1,410	13,959	20,575	3,050	2,613	3,527	6,580	82	54,576
Resulting in property damage only ¹	2,421	706	6,851	4,148	48,216	55,344	8,549	8,618	17,301	17,757	291	170,202

For footnote, see end of table, p. 840.

16.—Motor Vehicle Traffic Accidents, by Province, 1958—concluded

Item	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Persons Killed	44	20	161	155	821	1,112	125	134	263	282	1	3,118
Drivers.....	8	10	46	49	..	395	47	59	106	94	1	815 ²
Passengers.....	12	3	58	38	..	335	49	46	118	97	—	756 ²
Pedestrians.....	21	4	49	59	..	326	26	17	34	83	—	619 ²
Bicyclists.....	1	1	3	..	..	31	2	—	—	6	—	..
Motorcyclists and passengers.....	1	—	1	7	..	19	3	—	2	2	—	77 ²
Others.....	1	2	4	2	..	6	—	12	3	—	—	30 ²
Persons Injured	980	302	2,621	2,134	20,277	30,106	4,383	4,113	5,201	9,814	130	80,061
Drivers.....	202	109	791	672	..	10,281	1,494	1,575	1,800	3,123	53	20,100 ²
Passengers.....	336	140	1,112	952	..	12,862	2,110	2,107	2,564	4,955	69	27,207 ²
Pedestrians.....	394	38	598	408	..	5,201	616	333	604	1,166	8	9,366 ²
Bicyclists.....	36	11	94	..	..	1,081	163	66	133	350	—	..
Motorcyclists and passengers.....	3	—	10	81	..	630	3	17	76	194	—	2,945 ²
Others.....	9	4	16	21	..	51	—	15	24	26	—	166 ²
Property Damage Caused¹	\$'000 1,285	352	3,400	2,534	..	35,461	4,272	4,892	8,509	11,918	202	72,825²

¹ All reported accidents are those resulting in property damage estimated at \$100 or over. Quebec.

² Included with drivers.

² Excludes

PART IV.—WATER TRANSPORT*

The Canada Shipping Act.—Legislation regarding all phases of shipping is consolidated in the Canada Shipping Act (RSC 1952, c. 29). Under the Act and its amendments the Parliament of Canada accepts full responsibility for the regulation of Canadian shipping.

Section 1.—Shipping Facilities and Traffic

Subsection 1.—Shipping

All Canadian waterways including canals, lakes and rivers are open on equal terms, except in the case of the coasting trade, to the shipping of all countries of the world so that the commerce of Canada is not dependent entirely upon Canadian shipping. However a large part of the inland and coastal traffic is carried in ships of Canadian registry.

Canadian Registry.—Under Part I of the Canada Shipping Act all ships in excess of 15 tons net register are required to be registered; ships of lower tonnage may be registered voluntarily, otherwise they are required to be operated under a Vessel Licence if powered by a motor of 10 hp. or more. Sect. 6 of the Act restricts ownership to British subjects or bodies corporate established under and subject to the laws of some part of Her Majesty's Dominions and having their principal place of business in those Dominions. Under the British Commonwealth Merchant Shipping Agreement all Commonwealth ships are given the general designation 'British Ship'; and a ship that should be but is not registered is not entitled to the privileges accorded to British ships. Ships in the planning stage or in course of construction may be recorded before registry by a Registrar of Shipping.

* Information and statistics dealing with this subject have been supplied as follows: aids to navigation, canals, harbours, administrative services, and marine services by the Department of Transport and the National Harbours Board; the St. Lawrence Seaway by the St. Lawrence Seaway Authority; part of the financial statistics by the Department of Public Works; shipping subsidies by the Director of Subsidized Steamship Services, Canadian Maritime Commission; and canal traffic and statistics of shipping by the Public Finance and Transportation Division, Dominion Bureau of Statistics.

1.—Vessels on the Canadian Shipping Registry, by Province, as at Dec. 31, 1957-59

NOTE.—Figures for 1935-56 are given in the corresponding table of previous Year Books beginning with the 1941 edition.

Province or Territory	1957		1958		1959	
	Ships	Gross Tonnage	Ships	Gross Tonnage	Ships	Gross Tonnage
	No.	No.	No.	No.	No.	No.
Newfoundland.....	866	74,264	834	72,754	797	69,699
Prince Edward Island.....	407	14,926	470	15,236	527	15,465
Nova Scotia.....	5,434	136,324	5,556	119,155	5,607	120,098
New Brunswick.....	1,287	55,639	1,323	56,449	1,650	65,139
Quebec.....	2,221	705,945	2,315	708,846	2,394	776,998
Ontario.....	2,208	790,263	2,257	818,299	2,296	814,653
Manitoba.....	110	14,675	109	14,114	104	13,662
Saskatchewan.....	—	—	—	—	—	—
Alberta.....	7	630	7	630	11 ¹	531 ¹
British Columbia.....	5,731	560,947	5,908	573,337	6,113	592,491
Yukon Territory.....	16	4,413	11	3,837	8	3,411
Northwest Territories.....	7	326	7	326	2	2
Totals.....	18,294	2,358,352	18,797	2,382,953	19,507	2,472,147

¹ Includes N.W.T.—see footnote 2. ² Aklavik, N.W.T., closed as a port of registry Dec. 12, 1958. Ships using the Mackenzie River System registered at Edmonton, Alta.

Shipping Traffic.—Before 1952 the only information available on shipping activity in Canada was the number and registered net tonnage of vessels operating in and out of Canadian customs ports and the tonnage of cargoes loaded and unloaded at these ports destined for or arriving from foreign countries. In 1952 the coastwise movement of cargo in and out of customs ports was reported for the first time and in January 1957 the coverage was extended to include tonnage of vessels and tons of cargo in and out of non-customs ports. Reports are not required for vessels of less than 15 registered net tons.

2.—Vessels Entered at Canadian Ports, 1949-58

NOTE.—Exclusive of passenger service. Figures for 1929-48 are given in the corresponding table of previous Year Books beginning with the 1941 edition.

Year	In Foreign Service ¹		In Coasting Service		Totals	
	Vessels	Net Tons Registered	Vessels	Net Tons Registered	Vessels	Net Tons Registered
	No.	No.	No.	No.	No.	No.
1949.....	30,565	40,088,377	82,012	56,037,003	112,577	96,125,380
1950.....	31,420	42,816,949	84,065	56,066,997	115,485	98,883,946
1951.....	32,304	47,508,342	86,571	60,802,798	118,875	108,311,140
1952.....	33,782	52,156,098	79,722	56,776,504	113,504	108,932,602
1953.....	34,400	56,589,078	83,675	67,417,391	123,075	124,006,469
1954.....	34,079	54,767,687	84,890	64,291,085	118,969	119,058,772
1955.....	34,432	58,018,365	86,010	67,228,840	120,442	125,247,205
1956.....	35,315	63,105,100	88,640	75,220,366	123,955	138,325,466
1957.....	35,352	66,149,552	101,998	73,089,702	137,350	139,239,254
1958.....	30,710	57,738,034	100,234	76,197,625	130,944	133,935,659

¹ Sea-going and inland international.

3.—Vessels Entered at each of the Principal Canadian Ports, 1958

NOTE.—Exclusive of passenger service.

Province and Port	In Foreign Service ¹		In Coasting Service		Totals	
	Vessels	Net Tons Registered	Vessels	Net Tons Registered	Vessels	Net Tons Registered
	No.	No.	No.	No.	No.	No.
Newfoundland²	2,333	2,355,690	9,755	5,323,436	12,088	7,679,126
Bell Island.....	121	646,616	61	193,152	182	839,768
Botwood.....	73	218,368	190	45,100	263	263,468
Corner Brook.....	137	285,752	616	495,421	753	781,173
Port aux Basques.....	27	10,866	1,034	1,017,594	1,061	1,028,460
St. John's.....	861	726,074	923	454,269	1,784	1,180,343
Prince Edward Island²	72	90,710	244	167,453	316	258,163
Charlottetown.....	27	50,480	151	116,532	178	167,012
Nova Scotia²	4,283	7,347,733	5,639	4,541,627	9,922	11,889,360
Digby.....	63	12,446	325	605,134	388	617,580
Halifax.....	1,393	5,322,392	755	867,063	2,148	6,189,455
North Sydney.....	367	60,227	1,670	1,271,927	2,037	1,332,154
Sydney.....	148	215,484	730	1,260,015	878	1,475,499
Yarmouth.....	320	799,510	165	16,853	485	816,363
New Brunswick²	3,038	1,934,082	2,817	720,932	5,855	2,655,014
Dalhousie.....	69	175,820	9	17,590	78	193,410
Saint John.....	477	1,542,603	472	233,731	949	1,776,334
Quebec²	4,954	15,431,662	21,984	16,216,159	26,938	31,647,821
Montreal.....	2,577	6,595,006	4,781	5,404,161	7,358	11,999,167
Port Alfred.....	357	1,206,586	593	503,362	950	1,709,948
Quebec.....	806	3,208,404	1,934	2,389,979	2,740	5,593,383
Sept Îles.....	328	2,301,038	906	1,014,330	1,234	3,315,368
Trois Rivières.....	303	835,461	2,364	1,321,220	2,667	2,156,681
Ontario²	6,434	13,393,752	12,875	22,112,084	19,309	35,505,836
Amherstburg.....	265	210,181	49	23,658	314	233,839
Cornwall.....	55	60,083	170	161,598	225	221,681
Fort William.....	215	558,240	746	2,538,356	961	3,096,596
Hamilton.....	741	2,851,011	637	787,166	1,378	3,638,177
Kingston.....	121	143,026	754	1,125,136	875	1,268,162
Little Current.....	128	325,108	154	110,239	282	435,347
Michipicoten Harbour.....	78	280,598	75	291,673	153	572,271
Midland.....	30	81,424	204	752,979	234	834,403
Port Arthur.....	209	748,964	949	3,793,588	1,158	4,542,552
Port Colborne.....	426	697,570	749	1,689,599	1,175	2,387,169
Port Credit.....	80	54,168	137	156,683	217	210,851
Prescott.....	103	194,981	773	1,574,373	876	1,769,354
Sarnia.....	377	705,453	797	1,571,636	1,174	2,277,089
Sault Ste. Marie.....	411	1,606,167	379	813,750	790	2,419,917
Thorold.....	122	282,266	369	655,034	491	937,300
Toronto.....	1,075	1,714,230	1,192	1,695,444	2,267	3,409,674
Windsor.....	451	744,827	307	588,699	758	1,333,526
Manitoba (Churchill)	57	225,653	15	21,486	72	247,139
British Columbia²	9,539	16,958,752	46,905	27,094,448	56,444	44,053,200
Chemainus.....	181	445,216	687	282,671	868	727,887
Nanaimo.....	379	643,591	4,557	6,214,944	4,936	6,858,535
New Westminster.....	572	1,505,045	3,387	1,397,476	3,959	2,902,521
Ocean Falls.....	36	162,965	559	497,033	595	659,998
Port Alberni.....	186	665,586	604	287,048	790	952,634
Powell River.....	182	213,609	2,046	454,752	2,228	668,361
Prince Rupert.....	759	561,123	978	407,099	1,737	968,222
Vancouver.....	3,229	6,785,104	20,886	12,076,955	24,115	18,862,059
Victoria.....	1,970	3,999,608	3,753	2,774,248	5,723	6,773,856
Totals	30,710	57,738,034	100,234	76,197,625	130,944	133,935,659

¹ Sea-going and inland international.² Includes small ports not shown separately.

4.—Cargoes Loaded and Unloaded at Canadian Ports from Vessels in International Seaborne and Coastwise Service, by Province, 1957 and 1958

Province and Year	Loaded	Unloaded	Province or Territory and Year	Loaded	Unloaded
	tons	tons		tons	tons
Newfoundland—			Ontario—		
1957.....	4,896,869	2,259,608	1957.....	21,817,712	36,552,116
1958.....	4,132,919	2,424,118	1958.....	22,256,228	30,922,520
Prince Edward Island—			Manitoba—		
1957.....	153,821	188,187	1957.....	493,166	19,452
1958.....	135,915	215,928	1958.....	594,325	53,382
Nova Scotia—			British Columbia—		
1957.....	8,593,399	4,892,054	1957.....	17,992,788	8,844,165
1958.....	8,181,904	4,395,264	1958.....	16,963,419	8,619,106
New Brunswick—			Northwest Territories—		
1957.....	2,072,771	1,652,398	1957.....	1,378	22,233
1958.....	1,693,093	1,551,032	1958.....	1,382	38,428
Quebec—			Totals—		
1957.....	30,942,777	21,409,528	1957.....	86,964,681	75,840,241
1958.....	24,709,238	21,692,820	1958.....	78,668,423	69,912,598

The freight movement through a large port takes a number of different forms. The overseas movement of freight loaded on and unloaded from sea-going vessels frequently constitutes a surprisingly small part of the total. Usually the volume from coasting vessels is larger. There is, as well, the in-transit movement in vessels that pass through the harbour without loading or unloading and the movement from one point to another within the harbour, which in many ports amounts to a large volume.

Since 1957, shipping statistics are available covering traffic in and out of both customs and non-customs ports. Table 5 shows the principal commodities loaded and unloaded in foreign and coastwise trade at the seven ports handling the largest cargo volumes in 1958.

5.—Principal Commodities in Water-Borne Cargo Loaded and Unloaded at Ports Handling the Largest Tonnages in 1958

NOTE.—Only commodities totalling over 50,000 tons are listed.

Port and Commodity	International Seaborne Shipping		Coastwise Shipping		Total Seaborne and Coastwise
	Loaded	Unloaded	Loaded	Unloaded	
	tons	tons	tons	tons	tons
Montreal—					
Wheat.....	1,613,886	5,034	—	1,589,396	3,208,316
Coal, bituminous.....	—	496,868	177,873	1,577,310	2,252,051
Petroleum oils and products.....	45,956	364,448	1,583,807	60,233	2,054,444
Petroleum, crude.....	—	1,236,582	229,395	14,648	1,480,625
Barley.....	422,317	—	2,734	627,315	1,052,366
Gasoline.....	2,720	88,983	778,005	20,653	890,361
Flaxseed.....	212,663	—	—	312,653	525,316
Sugar, raw and refined.....	—	356,188	85,770	50	442,008
Corn.....	128,632	98,334	—	117,627	344,593
Gypsum.....	—	50	—	302,142	302,192
Iron and steel bar, etc.....	16,474	142,531	30,719	12,381	202,105
Sand, gravel or stone.....	—	114	—	189,980	190,094
Flour, grain.....	185,930	2,544	1,428	—	189,902
Cement.....	3	5,635	169,579	2,950	178,167
Iron ore.....	86,913	64,388	—	210	151,511
Oats.....	24,217	60	—	106,709	130,986
Soybeans.....	58,310	—	—	65,772	124,082
Sulphur.....	52,560	60,827	2,200	—	115,587
Molasses.....	—	89,673	19,750	—	109,423
Rye.....	37,159	3,202	—	45,412	85,773
Copper, brass, bronze, etc.....	74,703	998	130	2,210	78,041
Iron, pig and bloom.....	48,439	9,772	—	11,509	69,720
Scrap iron and steel.....	59,321	5,940	—	2,299	67,560
Chemicals and chemical products.....	14,071	44,316	1,682	2,742	62,811

**5.—Principal Commodities in Water-Borne Cargo Loaded and Unloaded at Ports
Handling the Largest Tonnages in 1958—continued**

Port and Commodity	International Seaborne Shipping		Coastwise Shipping		Total Seaborne and Coastwise
	Loaded	Unloaded	Loaded	Unloaded	
	tons	tons	tons	tons	tons
Montreal—concluded					
Salt.....	9	56,904	—	2,230	59,143
Lumber, timber, box, etc.....	17,200	2,920	1,740	28,568	50,428
Totals, Commodities Listed.....	3,101,483	3,136,311	3,084,812	5,094,999	14,417,605
Totals, All Commodities.....	4,232,094	4,435,853	3,622,278	5,459,483	17,749,708
Vancouver—					
Wheat.....	3,183,347	1	—	—	3,183,348
Pulpwood and chips.....	411,829	—	907,183	11,695	1,330,707
Sand, gravel or stone.....	—	—	9,721	882,351	892,072
Petroleum oils and products.....	13,621	126,748	651,547	19,848	811,764
Logs, posts, poles, etc.....	31,407	28,158	42,580	596,625	698,770
Lumber, timber, box, etc.....	535,942	5,832	1,521	12,854	556,149
Firewood hogged fuel.....	173,632	—	305,102	232	478,966
Barley.....	374,024	—	—	—	374,024
Flour grain.....	255,471	497	—	—	255,968
Newsprint paper.....	4,927	1,158	17,320	192,036	215,441
Gasoline.....	54,634	3,453	119,510	18	177,615
Cement.....	4,785	1,099	1,684	150,324	157,892
Flaxseed.....	116,916	—	—	—	116,916
Rapeseed.....	92,954	—	—	—	92,954
Sugar, raw and refined.....	—	89,584	35	—	89,619
Chemicals and chemical products.....	10,135	26,440	49,322	2,979	88,876
Iron and steel bar, etc.....	5,472	64,198	1,472	914	72,056
Salt.....	—	62,798	288	60	63,146
Wood pulp, pulp screenings.....	39,434	59	2,503	13,834	55,830
Totals, Commodities Listed.....	5,308,530	410,025	2,109,785	1,883,770	9,712,113
Totals, All Commodities.....	5,617,217	760,462	2,718,615	2,515,641	11,611,938
Sept Îles—					
Iron ore.....	7,090,305	—	1,819,938	—	8,910,243
Petroleum, oils and products.....	—	63,832	144	30,654	94,630
Woodpulp, pulp screenings.....	61,555	—	—	—	61,555
Totals, Commodities Listed.....	7,151,860	63,832	1,820,082	30,654	9,066,428
Totals, All Commodities.....	7,155,210	71,583	1,829,258	121,862	9,177,913
Port Arthur—					
Wheat.....	108,044	—	3,459,496	5,865	3,573,405
Iron ore.....	1,048,694	—	282,417	—	1,331,111
Barley.....	139,610	—	905,491	—	1,045,101
Oats.....	71,964	—	462,263	—	534,227
Coal, bituminous.....	—	177,419	—	—	177,419
Flaxseed.....	—	—	135,449	—	135,449
Rye.....	71,785	—	47,081	—	118,866
Pulpwood and chips.....	73,350	—	—	—	73,350
Grain screenings.....	31,130	—	28,671	—	59,801
Totals, Commodities Listed.....	1,544,577	177,419	5,320,868	5,865	7,048,729
Totals, All Commodities.....	1,551,072	200,766	5,387,441	187,061	7,326,340
Halifax—					
Petroleum, crude.....	—	2,199,885	—	—	2,199,885
Petroleum oils and products.....	9,387	297,576	1,077,776	4,900	1,389,639
Gypsum.....	1,195,608	—	80,270	—	1,275,878
Wheat.....	341,165	—	—	—	341,165
Gasoline.....	1,082	98,167	160,766	57,185	317,200
Totals, Commodities Listed.....	1,547,242	2,595,628	1,318,812	62,085	5,523,767
Totals, All Commodities.....	1,912,007	2,863,177	1,401,710	109,539	6,286,433
Hamilton—					
Iron ore.....	—	2,433,464	—	200,269	2,633,733
Coal, bituminous.....	—	2,511,560	—	2,537	2,514,097
Petroleum oils and products.....	—	167,012	2,900	137,365	307,277

**5.—Principal Commodities in Water-Borne Cargo Loaded and Unloaded at Ports
Handling the Largest Tonnages in 1958—concluded**

Port and Commodity	International Seaborne Shipping		Coastwise Shipping		Total Seaborne and Coastwise
	Loaded	Unloaded	Loaded	Unloaded	
	tons	tons	tons	tons	tons
Hamilton—concluded					
Sand, gravel or stone.....	—	6,125	41,701	135,772	183,598
Scrap iron and steel.....	506	67,593	—	—	68,099
Soybeans.....	—	53,703	5,900	—	59,603
Totals, Commodities Listed.....	506	5,239,457	50,501	475,943	5,766,407
Totals, All Commodities.....	11,924	5,321,772	277,794	582,586	6,194,076
Toronto—					
Coal, bituminous.....	—	1,394,152	2,504	27,899	1,424,545
Petroleum oils and products.....	—	142,291	82,415	325,611	550,317
Wheat.....	—	—	139,124	258,719	397,843
Soybeans.....	—	251,078	—	16,282	267,360
Barley.....	—	—	49,116	177,816	226,932
Gasoline.....	—	48,550	161,023	16,250	225,823
Cement.....	—	—	—	202,235	202,235
Sand, gravel or stone.....	—	2,000	—	120,014	122,014
Oats.....	—	—	36,623	65,438	102,061
Sugar, raw and refined.....	—	1,446	—	65,963	67,409
Scrap iron and steel.....	41,569	15,019	—	1,210	57,798
Totals, Commodities Listed.....	41,569	1,854,536	470,805	1,277,427	3,644,337
Totals, All Commodities.....	123,236	2,026,925	622,467	1,633,797	4,406,425
Port Colborne—					
Wheat.....	930	—	903,141	1,309,139	2,213,210
Barley.....	—	—	324,172	345,057	669,229
Flaxseed.....	—	83,882	160,903	68,692	313,477
Sand, gravel or stone.....	189,929	1,200	—	7,592	198,721
Coal, bituminous.....	—	190,030	6,500	—	196,530
Limestone.....	166,326	13,164	—	—	179,490
Oats.....	—	—	85,101	77,166	162,267
Iron ore.....	2,733	89,602	—	21,760	114,095
Corn.....	—	49,748	46,427	—	96,175
Petroleum oils and products.....	—	5,202	—	66,250	71,452
Rye.....	—	—	21,694	40,554	62,248
Totals, Commodities Listed.....	359,918	432,828	1,547,938	1,936,210	4,276,894
Totals, All Commodities.....	381,449	440,082	1,599,370	1,959,187	4,380,088
Quebec—					
Petroleum oils and products.....	1,154	252,184	54,248	641,948	949,534
Pulpwood and chips.....	10,343	—	4,255	924,780	939,378
Wheat.....	352,308	—	—	136,061	488,369
Gasoline.....	—	52,450	27,109	304,502	384,061
Newsprint paper.....	194,053	11	—	—	194,064
Coal, bituminous.....	—	24,565	4,696	148,357	177,618
Barley.....	32,250	—	—	132,047	165,197
Asbestos, raw.....	155,262	—	—	—	155,262
Cement.....	—	427	68,002	37,111	105,540
Oats.....	—	—	—	96,651	96,651
Totals, Commodities Listed.....	745,370	329,637	158,310	2,422,357	3,655,674
Totals, All Commodities.....	879,596	462,865	197,147	2,457,253	3,996,861
Fort William—					
Wheat.....	83,677	—	1,776,602	7,535	1,867,814
Barley.....	177,228	—	491,900	—	669,128
Oats.....	8,902	—	193,336	—	202,238
Petroleum oils and products.....	—	5,334	—	159,267	175,676
Coal, bituminous.....	—	156,844	—	—	156,844
Gasoline.....	—	6,745	—	99,520	106,265
Newsprint paper.....	100,636	1	—	—	100,637
Flaxseed.....	3,033	—	93,516	—	96,549
Limestone.....	—	70,562	—	—	70,562
Totals, Commodities Listed.....	373,476	239,486	2,566,429	266,322	3,445,713
Totals, All Commodities.....	420,487	279,075	2,728,243	457,032	3,884,837

Subsection 2.—Harbours

Water transportation cannot be studied with any degree of completeness without taking into consideration the co-ordination of land and water transportation at many of the ports. Facilities provided to enable interchange movements include the necessary docks and wharves, some for passenger traffic but most of them for freight, warehouses for the handling of general cargo, and special equipment for such bulk freight as lumber, coal, oil and grain. Facilities may include cold storage warehouses, harbour railway and switching connections, grain elevators, coal bunkers, oil storage tanks and, in the chief harbours, dry dock accommodation.

Eight of the principal harbours of Canada are administered by the National Harbours Board. Seven other harbours come under the supervision of the Department of Transport and are administered by commissions that include municipal as well as Federal Government appointees. In addition, there are about 300 public harbours that are under the direct supervision of the Department of Transport. These harbours are administered under rules and regulations approved by the Governor General in Council. Harbour masters have been appointed by the Minister of Transport for 131 of these harbours, their remuneration being paid from fees levied on vessels under the terms of the Canada Shipping Act.

At most ports, in addition to the harbour facilities operated by the operating authorities, there are dock and handling facilities owned by private companies such as railway, pulp and paper, oil and sugar industries. At several of the ports there are also dry docks, as shown in Table 7.

National Harbours Board.—The National Harbours Board, a Crown corporation established in 1936, is charged with the administration and operation of the following properties: port facilities such as wharves and piers, transit sheds, grain elevators, cold storage warehouses, terminal railways, etc., at the harbours of Halifax, Saint John, Chicoutimi, Quebec, Trois Rivières, Montreal, Vancouver, and Churchill; grain elevators at Prescott and Port Colborne; and the Jacques Cartier Bridge at Montreal. These facilities represent a capital investment of approximately \$280,000,000. Current operating revenues and expenditures are given in Table 28, p. 868.

6.—Facilities of the Larger Harbours Administered by the National Harbours Board, as at Dec. 31, 1958

NOTE.—The facilities at these ports include those under the control of other agencies as well as those of the National Harbours Board.

Item	Halifax	Saint John	Quebec	Trois Rivières	Montreal	Vancouver
Minimum depth of approach channel..... ft.	51	30	35	35	35	39
Harbour railway..... miles	31	64	23	5	63	75
Piers, wharves, jetties, etc..... No.	88	34	42	21	126	105
Length of berthing..... ft.	35,445	23,961	33,650	9,188	61,482	34,636
Transit-shed floor space..... sq. ft.	1,464,774	1,000,000	693,000	290,800	2,816,700	1,552,600
Cold storage warehouse capacity..... cu. ft.	1,719,000	900,000	500,000	—	2,900,000	3,031,417
Grain Elevators—						
Capacity..... bu.	4,152,500	3,000,000	6,000,000 ¹	6,800,000	16,762,000	21,775,500
Loading rate..... bu. per hr.	90,000	150,000	90,000	40,000	560,000	320,000
Floating crane capacity (1)..... tons	80	65	75	—	90	85
Coal dock storage capacity..... "	57,000	—	215,000	300,000	1,415,000	—
Oil tank storage capacity..... gal.	195,583,000	27,646,820	138,156,300	1,410,000	872,384,100	234,589,277
Locomotive crane capacity (2) tons	—	25	—	—	—	—
Electric luffing crane capacity (2)..... tons per hr.	—	180 ²	—	—	—	—

¹ Includes a 3,000,000 bushel grain storage shed connected with the elevator.

² Sugar.

Dry Docks.—The Department of Public Works of the Federal Government owns five dry docks—one at Kingston, Ont., two at Lauzon, Que., and two at Esquimalt, B.C.—and operates three with the one at Kingston under lease to and operated by the Canadian Shipbuilding and Engineering Company of Kingston and the old Esquimalt dry dock operated by the Department of National Defence as HMC Dockyard. Each of the large dry docks at Lauzon and Esquimalt can be divided for use of small vessels; the larger Lauzon dock cost approximately \$4,500,000 and the larger Esquimalt dock approximately \$7,000,000.

7.—Dimensions of Dry Docks Owned by the Federal Government

Location	Length	Width at—			Depth of Water on Sill	Rise of Tide	
		Coping	Bottom	Entrance		Spring	Neap
	ft.	ft.	ft.	ft.	ft.	ft.	ft.
Lauzon, Que., <i>Champlain</i>	1,153.8	144.0	105.0	120.0	40.0 H.W.	18	13.3
Lauzon, Que., <i>Lorne</i>	600.3	100.0	73.4	62.0	25.7 H.W.	18	13.3
Esquimalt, B.C. (old dock).....	450.0 ¹	90.0	41.0	65.0	28.8 H.W. ²	7 to 10	3 to 8
Esquimalt, B.C.....	1,173.0	149.0	126.0	135.0	40.0 H.W.	7 to 10	3 to 8
Kingston, Ont. ³	370.0	55.0	47.0	55.0	16.0 L.W.	—	—

¹ Face of caisson to vertical face at head, 481.0 ft.; length of pad on which keel blocks rest, 403.5 ft.

keel blocks at H.W. 10 ft., tide 26.1 ft.

² Over

Kingston. ³ Under lease to Canadian Shipbuilding and Engineering Company,

8.—Dimensions and Cost of Dry Docks Subsidized under the Dry Docks Subsidies Act 1910

Location	Length	Width	Depth Over Sill	Total Cost	Subsidy
	ft.	ft.	ft.	\$	
Collingwood No. 1, Ont.....	518.3	56.0	14	190,783	¹
Collingwood No. 2, Ont. ²	412.0	95.0	16	339,152	¹
Port Arthur, Ont.....	708.0 ³	77.5	16	1,258,050	¹
Montreal, Que. (floating dock), <i>Duke of Connaught</i>	601.0	98.0	38	3,000,000	¹
Saint John, N.B.....	1,157.8	131.5	40.3	5,500,000	¹
North Vancouver, B.C. (floating dock).....	556.5	98.0	28 ⁴	2,500,000	4½ p.c. for 35 years

¹ Subsidy payments have been completed.

² Now converted to slip.

³ Position of caisson may

be altered to provide a maximum working length of 720 ft.

⁴ Over sill (H.W.).

Subsection 3.—Canals

The canals and canalized waters of Canada under the jurisdiction of the Department of Transport together with those under the jurisdiction of the St. Lawrence Seaway Authority comprise a series of waterways providing navigation for 1,875 miles inland from salt water.

The canals included under the two classifications—Seaway Canals and Department of Transport Canals—are listed in Table 9 with their locations, lengths and lock complement. In addition to these, the federal Department of Public Works administers the St. Andrews Lock (length, width and draught, respectively, 215, 45 and 17 feet) on the Red River at Selkirk, Man., and the lock at Poupore, Que. A few small locks are operated by provincial authorities.

During 1958, 35,096,587 tons of freight and 27,451 vessels passed through the canals as compared with 37,230,349 tons of freight and 29,436 vessels during 1957. In addition to freight and passenger vessels, thousands of pleasure craft are locked through the canals. Vessels locking at Sault Ste. Marie during 1958 carried 139,729 passengers as compared with 96,360 in 1957.

Revenue from canals during the year ended Mar. 31, 1959 amounted to \$1,654,014, of which \$1,098,935 was derived from rentals for hydraulic and land privileges and wharfage; in the previous fiscal year the total revenue was \$1,984,717 with rentals and wharfage amounting to \$1,444,296.

9.—Lengths of Channels and Dimensions of Locks under the Control of the St. Lawrence Seaway Authority or the Department of Transport

Name	Location	Length of Channel ¹	Locks			
			No.	Minimum Dimensions		
				Length	Width	Depth
		miles		ft.	ft.	ft.
Seaway Canals²						
Main Route—						
South Shore.....	Montreal to Caughnawaga.....	20	2	766	80	30
Beauharnois.....	Melocheville to Lake St. Francis.....	15	2	766	80	30
Iroquois.....	Iroquois Point.....	1	1	766	80	30
Welland.....	Port Weller, Lake Ontario to Port Colborne, Lake Erie.....	27.60	8	859	80	30
Non-toll—						
Lachine.....	Montreal to Lachine.....	8.74	5	270	45	14
Cornwall (not through canal).....	Cornwall to Closure dyke.....	3.50	4	270	43.67	14
Sault Ste. Marie.....	St. Mary's Rapids, Sault Ste. Marie.....	1.38	1	900	60	18.25
Department of Transport Canals						
Canso Canal.....	Canso Causeway, N.S.....	0.70	1	820	80	28
Atlantic Ocean to Bras d'Or Lakes—						
St. Peters.....	St. Peters Bay to Bras d'Or Lakes, Cape Breton, N.S.....	0.50	1	300	47.4	17
Richelieu River—						
St. Ours.....	St. Ours, Que.....	0.12	1	339	45	12
Chambly.....	Chambly to St. Johns, Que.....	11.78	9	120.5	23.25	6.5
Ottawa and Rideau Rivers—						
Ste. Anne.....	Junction of St. Lawrence and Ottawa Rivers.....	0.12	1	200	45	9
Carillon.....	Carillon Rapids, Ottawa River.....	0.94	2	200	45	9
Grenville.....	Long Sault Rapids, Ottawa River.....	5.94	5	200	45	9
Rideau.....	Ottawa to Kingston.....	123.53	47	134	33	5.5
	Rideau Lake to Perth (Tay Branch)....	6.82	2	134	33	5.5
Lake Ontario to Georgian Bay—						
Trent.....	Trenton to Peterborough lock, Peterborough.....	88.74	18	175	33	8 ³
	Peterborough lock to Swift Rapids.....	135.71	24	134	33	6
	Swift Rapids to Big Chute.....	8.00	—	—	—	4
	Big Chute to Port Severn.....	8.11	1	100	25	6
	Sturgeon Lake to Lindsay (Scugog Branch).....	10.00	1	142	33	6
	Lindsay to Port Perry (Scugog Branch)..	25.00	—	—	—	4.5
Murray.....	Isthmus of Murray, Bay of Quinte.....	7.53	—	—	—	8.5 ⁴

¹ Minimum depth of Seaway canals is 27 feet and minimum width 200 feet.

² Wiley-Dondero canal and two locks near Massena, N. Y., are in United States territory; dimensions are approximately the same as those of Canadian facilities.

³ Notice must be given by vessels of more than six-foot draught.

⁴ With Lake

10.—Traffic through Canadian Canals, by Nationality of Vessel, Navigation Seasons 1949-58

NOTE.—Figures include duplications where vessels use two or more canals. Figures from 1886 are available in the corresponding table of previous Year Books beginning with the 1902 edition.

Navigation Season	Canadian		United States		United Kingdom		Other	
	Vessels	Registered Tonnage	Vessels	Registered Tonnage	Vessels	Registered Tonnage	Vessels	Registered Tonnage
	No.	No.	No.	No.	No.	No.	No.	No.
1949.....	21,724	20,773,831	2,159	3,011,023	1	1	338	249,015
1950.....	21,179	21,989,263	2,785	3,175,566	1	1	458	338,636
1951.....	22,141	22,951,468	2,993	3,987,700	1	1	414	309,972
1952.....	22,565	25,608,373	3,081	3,686,781	1	1	676	514,224
1953.....	23,378	27,845,139	2,984	3,777,571	1	1	1,201	919,875
1954.....	21,066	25,303,262	3,145	3,245,555	1	1	1,081	893,778
1955.....	22,758	27,709,232	3,950	3,798,290	200	132,858	1,264	1,044,774
1956.....	27,473	31,019,188	3,776	3,675,511	267	186,978	1,349	1,141,259
1957.....	24,191	27,726,358	3,324	3,802,909	332	221,254	1,589	1,364,205
1958.....	21,763	26,635,559	3,216	3,029,624	302	198,926	2,170	1,793,309

¹ Included with Canadian vessels.

11.—Freight Traffic through Canadian Canals by Origin of Cargo, Navigation Seasons 1949-58

NOTE.—Figures include duplications where cargoes pass through two or more canals. Figures from 1886 are available in the corresponding table of previous Year Books beginning with the 1902 edition.

Navigation Season	Canada		United States		United Kingdom		Other		Total
	Tons	P.C. of Total	Tons	P.C. of Total	Tons	P.C. of Total	Tons	P.C. of Total	Tons
1949.....	14,800,509	60.7	9,573,243	39.3	1	1	1	1	24,373,752
1950.....	15,138,009	55.2	12,301,067	44.8	1	1	1	1	27,439,076
1951.....	16,004,234	54.6	13,320,750	45.4	1	1	1	1	29,325,034
1952.....	17,245,051	55.0	14,109,088	45.0	1	1	1	1	31,354,139
1953.....	18,464,479	55.3	14,908,585	44.7	1	1	1	1	33,373,064
1954.....	17,237,542	57.3	12,833,159	42.7	1	1	1	1	30,070,701
1955.....	20,002,540	57.4	14,177,878	40.7	120,827	0.3	572,953	1.6	34,874,198
1956.....	24,698,001	61.7	14,457,217	36.1	106,448	0.3	754,899	1.9	40,016,565
1957.....	21,459,552	57.6	15,021,930	40.3	151,550	0.4	597,317	1.6	37,230,349
1958.....	21,832,526	62.2	12,177,376	34.7	223,059	0.6	863,626	2.5	35,096,587

¹ Included with United States.

12.—Tonnage of Products Carried by Canal, classified by Commodity Group, Navigation Season 1958

NOTE.—Figures include duplications where cargoes pass through two or more canals.

Canal	Agricultural Products	Animal Products	Manufactures and Miscellaneous	Forest Products	Mineral Products	Total
	tons	tons	tons	tons	tons	tons
Sault Ste. Marie.....	411,228	—	614,421	790	202,222	1,228,661
Welland Ship.....	6,652,615	14,233	4,168,402	524,229	9,914,715	21,274,194
St. Lawrence River.....	4,868,378	16,050	3,012,145	487,813	3,377,714	11,762,100
Richelieu River.....	—	—	107,298	—	833	108,131
St. Peters.....	53	814	540	8	296	1,711
Murray.....	—	—	383	—	—	383
Ottawa River.....	—	—	—	—	189,980	189,980
Rideau.....	—	—	40	10	26	76
Trent.....	—	—	75	—	—	75
St. Andrews.....	129	2,402	2,041	94	4	4,870
Canso.....	12,129	13,235	443,456	23,574	34,212	526,606
Totals.....	11,944,532	46,734	8,348,801	1,036,518	13,720,002	35,096,587

13.—Freight Traffic through Canadian Canals, by Direction and Origin, Navigation Season 1958 with Totals for 1955-58

NOTE.—Figures include duplications where cargoes pass through two or more canals.

Canal	From Canadian to Canadian Ports		From Canadian to United States Ports ¹		From United States to United States Ports ¹		From United States ¹ to Canadian Ports	
	Up	Down	Up	Down	Up	Down	Up	Down
	tons	tons	tons	tons	tons	tons	tons	tons
Sault Ste. Marie.....	249,890	586,681	290	254,354	13,708	22,857	83,281	17,600
Welland Ship.....	1,185,957	6,155,677	3,153,641	144,681	635,416	1,376,916	30,573	8,591,333
St. Lawrence River.....	2,066,323	5,378,332	2,072,981	192,483	321,042	374,572	209,901	1,146,466
Richelieu River.....	56,180	5,135	25,377	481	—	—	—	20,958
St. Peters.....	863	848	—	—	—	—	—	—
Murray.....	183	—	200	—	—	—	—	—
Ottawa River.....	—	189,980	—	—	—	—	—	—
Rideau.....	37	39	—	—	—	—	—	—
Trent.....	40	35	—	—	—	—	—	—
St. Andrews.....	2,642	2,028	—	—	—	—	—	—
Canso.....	348,558	117,306	—	40,619	4,606	4,637	10,880	—
Totals.....	3,910,673	12,436,061	5,252,489	632,618	974,772	1,778,952	334,635	9,776,357
Traffic by Direction		Origins of Cargo		Total Cargo				
	Up	Down	Canada	United States ¹	1958	1957	1956	1955
	tons	tons	tons	tons	tons	tons	tons	tons
Sault Ste. Marie.....	347,169	881,492	1,091,215	137,446	1,228,661	1,784,700	2,989,278	2,201,075
Welland Ship.....	5,005,587	16,268,607	10,639,956	10,634,238	21,274,194	22,372,538	23,066,261	20,893,572
St. Lawrence River.....	4,670,247	7,091,853	9,710,119	2,051,981	11,762,100	12,191,492	13,499,698	11,446,620
Richelieu River.....	81,557	26,574	87,173	20,958	108,131	112,366	98,963	97,130
St. Peters.....	863	848	1,711	—	1,711	4,641	1,700	6,783
Murray.....	383	—	383	—	383	790	—	667
Ottawa River.....	—	189,980	189,980	—	189,980	356,640	283,500	206,525
Rideau.....	37	39	76	—	76	5,844	399	413
Trent.....	40	35	75	—	75	74	289	102
St. Andrews.....	2,642	2,028	4,670	—	4,670	5,469	8,082	8,112
Canso.....	364,044	162,562	506,483	20,123	526,606	395,795	68,395	13,199
Totals.....	10,472,569	24,624,018	22,231,841	12,864,746	35,096,587	37,230,349	40,016,565	34,874,198

¹ Figures for the United States include small amounts of traffic from other foreign countries.

The figures in Tables 12 and 13 include duplications where the same freight passes through two or more canals, but in Table 14 duplications in the traffic passing through the St. Lawrence and Welland Ship canals and the Canadian lock at Sault Ste. Marie have been eliminated wherever possible.

Grain trans-shipped at Georgian Bay, Lake Erie, or other ports above Montreal is treated as new cargo and as most of this grain has passed through either the Canadian or United States locks at Sault Ste. Marie there are still duplications in the data because of this treatment. These duplications cannot be avoided when net totals for the Canadian canals are computed because it is impossible to ascertain which lock at Sault Ste. Marie was used by the grain reloaded at Port Colborne, Ont., or other trans-shipping port.

14.—St. Lawrence-Great Lakes Traffic using St. Lawrence, Welland Ship and Sault Ste. Marie Canals, 1958

Canals Used	Up-bound Freight	Down-bound Freight	Total
	tons	tons	tons
Traffic using Canadian St. Lawrence-Great Lakes System	7,175,034	20,214,574	27,389,608
St. Lawrence only	1,930,876	3,363,611	5,294,487
St. Lawrence and Welland Ship	2,691,046	3,459,443	6,150,489
St. Lawrence, Welland Ship and Sault Ste. Marie	33,971	78,819	112,790
Welland Ship only	2,205,943	12,510,028	14,715,971
Welland Ship and Sault Ste. Marie	74,627	220,317	294,944
Sault Ste. Marie only	238,571	582,356	820,927
Traffic using United States Locks at Sault Ste. Marie only	9,285,342	66,167,510	75,452,852
Totals	16,460,376	86,382,084	102,842,460

Traffic through the Sault Ste. Marie canals, Canadian and American, has fluctuated from a high of 128,489,000 tons reached in 1953 to 111,792,000 tons in 1957 and 76,684,000 tons in 1958. The dominant traffic from a tonnage aspect is iron ore which also reached its highest point in 1953 at 98,657,591 tons, decreasing to 86,509,714 tons in 1957 and to 54,188,010 tons in 1958. Soft coal has usually been second in volume to iron ore, increasing from 8,676,297 tons during the 1949 season to 13,301,048 tons in 1950; volume in recent years amounted to 9,053,769 tons in 1955, 10,238,048 tons in 1956, 8,970,640 tons in 1957 and 6,388,803 tons in 1958. Although wheat is generally third in tonnage, in 1958 it was in second place with a volume of 6,615,540 tons. Its value over the past quarter-century has been generally higher than that of either iron ore or coal. Other grains have been about one-quarter to one-fifth of the wheat tonnage and a smaller ratio of the value.

Canadian use of the Panama Canal.—The use of the Panama Canal as a transport facility for the movement of goods from one Canadian port to another is of relatively minor importance. Of the total of 4,574,336 long tons of cargo leaving the West Coast of Canada in the year ended June 30, 1959 and passing through the Panama Canal, only 25,974 long tons were destined for Eastern Canadian ports. Similarly, of the 282,206 long tons of cargo leaving Eastern Canadian ports and passing through the Panama Canal, 49,336 long tons were destined for Western Canadian ports. The total tonnage passing through the Panama Canal and arriving in Canadian West Coast ports from any origin, Canada or elsewhere, amounted to 523,174 long tons in the year ended June 30, 1959; the total from any origin arriving at Eastern Canadian ports after having passed through the Panama Canal was 317,302 long tons.

Subsection 4.—The St. Lawrence Seaway

Events leading up to the beginning of the St. Lawrence Seaway project and the progress made during the years of its construction are covered in previous Year Books, beginning with the 1954 edition. Also a special article carried in the 1956 Year Book (pp. 821-829) gives detailed information on Great Lakes-St. Lawrence waterway traffic immediately prior to the beginning of construction on the new project. The following article brings up to date the story of the Seaway after its first year of operation.

THE ST. LAWRENCE SEAWAY IN OPERATION*

The St. Lawrence Seaway has been described as the "master project of the North Atlantic Continent" and, indeed, it constitutes a transportation asset that may advance more notably than any other factor the economic integration of the mid-Continent region. With the deepening of the St. Lawrence River channels, larger ships with deeper draughts may ply into the heart of the Continent and smaller ships that were previously able to negotiate the river may now save eight to ten hours of time in their passage from Montreal

* Prepared by Dr. S. Judek, University of Ottawa. Statistical data were obtained from DBS annual report *Canal Statistics; Annual Report of the Lake Carriers' Association, 1959*; and *Annual Report of the St. Lawrence Seaway Authority, 1959*.

to Lake Ontario. Thus is increased the river's vital role of providing low-cost water transportation so essential to the economic development of Canada, enlarging the industrial areas of the east and stimulating the primary producing areas of the west. By connecting the oceans of the world with the rich industrial, agricultural, mineral and forested areas of North America, the enlarged waterway will increase Canada's ability to compete in overseas markets and also facilitate trade and foster closer economic relations between Canada and the United States. It is fortunate that both countries have a mutual interest in the Seaway as a common highway and transportation outlet for the industries and trades located in their respective territories.

The Seaway is a lasting monument to Canadian and American engineering skill and enterprise. The very magnitude of the project is well illustrated by the following facts: more than 140 separate major construction contracts were made; the project required excavation of 51,000,000 cu. yards of earth and the removing of another 18,000,000 cu. yards in dredging operations; more than 2,000,000 cu. yards of cement were mixed from 10,000,000 bags of dry cement; 58,000 tons of steel were used; the project provided at one time or another employment for nearly 61,000 persons whose earnings benefited various trades and towns along the St. Lawrence River; the total cost amounted to \$470,000,000 of which Canada's share was \$330,000,000; the relocation of towns required the evacuation of about 6,500 people and required an expenditure of \$30,000,000. The major part of the construction work, initiated in 1954, was completed by the spring of 1959 and the St. Lawrence Seaway was opened to commercial traffic on Apr. 25 of that year; the official opening by Her Majesty Queen Elizabeth II and President Eisenhower of the United States took place on June 26, 1959.

A number of factors contributed to the early difficulties encountered in the first year of operation of the Seaway. Lack of proper equipment on some foreign ships, unfamiliarity with procedures, inadequate loading and unloading equipment, an insufficient number of qualified pilots to ensure smooth flow of traffic, etc., delayed ships in their passage through the canals, particularly through the Welland Canal, and the cost of having a ship idle amounted to from \$1,000 to \$3,000 per day. However, these difficulties are gradually disappearing and, in time, ship operators will be able to maintain service on schedule.

The impact of the Seaway on other means of transportation and on the over-all national economy will become clearer as time progresses. It is believed that the immediate effects will cause some loss of traffic and revenue to the railways but that, in the long run, the industrial expansion and larger markets resulting from the enlarged waterway will more than compensate for the short-run loss. It is also likely that long-haul truck traffic will experience some reduction but that short-haul truck traffic will suffer no adverse effects. Although the potential volume of Seaway trade and the growing obsolescence of the present Canadian inland merchant fleet will ultimately require the addition of new and modern ships, it is not generally expected that the Seaway will have any perceptibly beneficial effect on the Canadian shipbuilding industry. A few new vessels for Seaway trade have been constructed and the building of additional large lakers, not designed to be ocean-going should provide some work for Canadian shipyards in the future. Work has already resulted from the conversion of small canallers into larger lake ships, though further conversion is unlikely. The volume of ship-repair business will depend on the number of inland merchant vessels using it, including perhaps foreign ships, but there will likely be little repair work with respect to foreign ocean-going ships because of the high cost of such work at Canadian shipyards.

Historical Background.—The Great Lakes-St. Lawrence waterway is a natural westward extension of the important North Atlantic sailing route, carrying it some 2,300 miles into the middle of the North American Continent. The Seaway proper extends from Montreal to Lake Erie and includes the Welland Ship Canal which bypasses Niagara Falls between Lakes Ontario and Erie. The first canal system and locks built to overcome natural barriers to navigation in the St. Lawrence River and in the waters connecting the Great Lakes were completed in 1700. By the middle of the 1800's, nine-foot canals had been completed in Canada and by 1900 the regulating depth was 14 feet.

The first co-operative action of the Governments of Canada and the United States leading towards the Seaway development may be said to date at least as far back as 1905. At that time, a Joint International Waterways Commission was established to deal with all matters pertaining to international waters between the two countries. In 1921 this Commission recommended a treaty for a joint project from Montreal to Lake Erie to deepen the waterway. Both countries signed the St. Lawrence Deep Waterway Treaty in 1932 but two years later it was rejected by the United States Senate. In 1938 attempts were made to negotiate a new treaty, without success. The wartime need for power led to the Great Lakes-St. Lawrence Basin Agreement of 1941 but it, too, failed to receive the ratification of the United States Congress. Then in 1951 an agreement was reached between the Federal Government of Canada and the Provincial Government of Ontario, which provided for the construction of the Seaway by the Federal Government and for the development of power in the International Rapids Section by The Hydro-Electric Power Commission of Ontario and a United States agency to be designated later. In 1952 Canada and the United States concluded an agreement on power development and Canada expressed the intention to go alone in developing navigation facilities on the Canadian side of the St. Lawrence River between Montreal and Lake Erie to provide for 27-foot depth. In 1953 the United States Supreme Court confirmed the previous action of the Federal Power Commission in granting a licence to the Power Authority of New York State, which decision made American co-operation possible. Meanwhile, however, the United States Congress enacted the Wiley-Dondero Act authorizing and directing the Saint Lawrence Seaway Development Corporation to join the St. Lawrence Seaway Authority, established in Canada in 1951, in constructing on United States territory all the navigation facilities necessary in the International Rapids Section of the River.

At last the imaginative and creative aspirations of generations in both Canada and the United States had been translated into action—no doubt the future will justify the wisdom of this decision and prove its economic value to both countries.

Waterway Service and Transport Facilities.—The St. Lawrence Seaway involves a total decline of about 600 feet. From the water level of Lake Superior, the Great Lakes-St. Lawrence inland waterway falls to sea level in five steps: (1) St. Mary's River between Lakes Superior and Huron, with a drop of 21 feet; (2) the St. Clair-Detroit passage joining Lake Huron and Lake Erie, with a drop of eight feet; (3) the Welland Canal from Lake Erie to Lake Ontario, with a drop of 326 feet; (4) the upper St. Lawrence River from Lake Ontario to Montreal, with a drop of 225 feet; and (5) the long passage from Montreal to the sea, with a drop of 20 feet. The eastern section of the route is the deep-water section from Montreal to the sea, including the St. Lawrence Ship Channel extending from Montreal to 30 miles below Quebec City. Canadian Government dredges maintain this channel at a depth of 35 feet and it has been widened and straightened to provide for increased traffic with the completion of the Seaway. The Seaway lies entirely in Canada except for a stretch of 47 miles in the International Rapids Section—from Cornwall to Iroquois—and a stretch in the Thousand Islands.

Navigation facilities have been improved by the elimination of the 14-foot canal bottleneck that existed between Montreal and Prescott and the provision of a channel of minimum 27-foot depth. Six St. Lawrence canals with 22 locks have been replaced by four canals with seven large locks—two of them in the United States across from Cornwall—which lift and lower vessels about 225 feet to and from Lake Ontario. The Welland Ship Canal, 27 miles in length, has been deepened from 25 to 27 feet. The old narrow and shallow canals allowed, on the average, ships to carry up to 3,000 tons only, as compared with the new capacity of 25,000 tons of bulk cargo in a modern lake carrier. Ocean-going ships may carry a maximum of about 10,000 tons.

St. Lambert Lock, at the southern end of the Victoria Bridge, lifts ships some 15 feet from the level of Montreal harbour to the level of Laprairie Basin in an 8½-mile-long channel. The Côte Ste. Catharine Lock lifts ships from the level of Laprairie Basin 30 feet to the level of Lake St. Louis. The Seaway allows ships to bypass the Lachine Rapids on the

other side of which the channel extends $7\frac{1}{2}$ miles before reaching Lake St. Louis. Then the Lower Beauharnois Lock at the west end of Lake St. Louis allows the bypassing of the Beauharnois Power House and lifts the ships 41 feet so that they may pass through a short canal to the Upper Beauharnois Lock, where they are again lifted 41 feet to reach the level of Lake St. Francis. After about 13 miles in the Beauharnois Canal, ships enter Lake St. Francis. Up to that point the building of all locks and the deepening of all channels were Canada's responsibility. Traffic moving westward then passes through two United States locks—the Snel Lock lifts ships 45 feet into the Wiley-Dondero Canal (10 miles long) and the Eisenhower Lock lifts them another 38 feet into Lake St. Lawrence. At the western end of this lake, Canada has built Iroquois Lock to allow ships to bypass the Iroquois Control Dam. After navigating the channel through the Thousand Islands to Lake Ontario, ships passing through a series of locks from Port Weller on the latter lake to Port Colborne on Lake Erie, a stretch of 27 miles, are raised 326 feet to the level of Lake Erie by way of the Welland Ship Canal. The usable length of the locks is 768 feet, the width 80 feet and the depth over sills, 30 feet.

Canadian Inland Shipping.—The number of Canadian flag vessels of 1,000 or more gross tons operating on the upper lakes and through the St. Lawrence canals in December 1959 was as follows:—

<i>Type of Vessel</i>	<i>No.</i>	<i>Gross Tonnage</i>	<i>Deadweight Tonnage</i>
Dry Cargo—			
Bulk freighters			
Iron ore.....	58	464,992	689,350
Self-unloaders.....	12	42,282	51,550
Mixed trades.....	124	273,804	405,850
Mixed barges.....	9	27,442	47,700
Package freighters.....	20	55,009	73,500
Tankers.....	41	80,681	117,995
Car Ferries.....	1	1,052	...
Passenger.....	5	13,080	...
TOTALS.....	270	958,342	1,385,945

It is commonly held that the dry bulk cargo ships, because of their special design and large carrying capacity, provide the lowest ton-mile transportation cost. The dead-weight capacity of the more recent additions to the fleet ranges from 5,000 to 25,000 tons. With the exception of self-unloaders, which carry their own cargo loading equipment, these ships rely on loading and unloading facilities at the ports. Package freighters carry a wide range of general merchandise including such commodities as farm equipment, automobiles and parts, hardware and electrical equipment and such package freight is of high value in proportion to its size and weight. These vessels usually run on regular schedules; they are faster than bulk carriers and a few carry passengers. Rates charged for package freight are under the control of the Board of Transport Commissioners. The small canallers, the majority of which are bulk dry cargo carriers, are gradually disappearing or are being converted into larger boats; they carry grain and other bulk cargo such as iron ore, coal, sulphur, pulpwood, etc.

The bulk carriers—which are mainly confined to the Great Lakes although they have great lifting capacity because of their relatively shallow draft—cannot operate much beyond Sept Îles but are better suited to ply in the St. Lawrence Seaway than the ocean-going freighters. The small ocean freighters that plied the old 14-foot canals are managing well enough but larger ocean freighters have encountered some difficulties. Having high superstructures, they are easily shifted by the wind and in narrow canals and locks have moved slowly and delayed other ships. In contrast, the lakers lie low and are not exposed to the winds and buffeted against the sides of a lock. Ocean-going vessels must carry only a light load when navigating the Seaway, and it has been estimated that the cost for an ocean-going ship to carry a load only to a 24-foot-six-inch draft (the Seaway maximum) is 25 p.c. higher than if the vessel were fully loaded for operations on the high seas.

It would seem that these initial difficulties will discourage larger ocean-going ships from using the Seaway and thus the waterway should become primarily the domain of inland shipping. This would imply that the Seaway will be used by the large lakers, dominated by grain and ore carriers, between lake ports and the St. Lawrence River ports and most of the large ocean freighters will discharge and take on their cargoes at or below Montreal. It is doubtful whether a ship can be designed combining the seaworthiness of ocean vessels and some of the capacity features of lakers to serve equally well in both ocean and inland waters.

In postwar years direct trade through the Great Lakes to overseas countries has shown a steady increase and this trend will probably continue despite the disadvantages encountered by ocean ships. Before the opening of the Seaway there were 17 shipping lines operating regular ocean services on this route, although most of them were of an experimental nature. In 1959 at least 17 countries took part in direct trade either with Canada or the United States through the St. Lawrence Seaway. In the bulk trade, cargoes transported in vessels other than Canadian or American totalled over 4,000,000 net tons and, in general and mixed cargo trade, foreign ships carried nearly 2,400,000 net tons. Apart from grain, the freight included manufactured goods such as iron and steel products, automobiles, electrical goods, glass, chemicals and clay and earthenware products.

Port Facilities.—Efficient and economical water transportation depends to a large degree on port and harbour facilities, such as docks, wharves, grain elevators, warehouses, loading and unloading equipment, railway connections, drydock accommodations, etc. Port facilities in the Great Lakes prior to the opening of the Seaway were, on the whole, adequate for the then-existing traffic. But the opening of the Seaway is probably the most significant factor in the economic development of the lake ports and, as traffic will be increasing steadily in volume, every major city on the lakes will attempt to improve its port facilities through a publicly financed program. The principal task of the ports is to change from local, industrial and bulk commodity ports to international, commercial ports dealing with a wide variety of goods, a task that must be accomplished within the next decade. Also co-operation among the lake ports is required in such matters as channel dredging, service rulings, priorities on lockages to be accorded foreign ships, etc.

Great Lakes ports which formerly specialized in trans-shipping grain and other bulk cargoes between lakers and canallers have lost their importance. Direct through-traffic from the Lakehead to St. Lawrence ports has had adverse effects on grain elevator business in Kingston, Collingwood, Goderich, Midland and Owen Sound ports. On the other hand, since the opening of the Seaway all transit sheds, open berths and other facilities at Montreal have been used to capacity. That port has 131 berths for ocean ships and over 30 transit sheds; the storage capacity of the grain elevators is nearly 17,000,000 bu. and grain can be loaded at 28 berths. Plans are ready for a new elevator of 5,300,000-bu. capacity. Montreal, being a midway point between the mouth of the St. Lawrence River and the Great Lakes, has served as a terminus for both ocean and Great Lakes navigation.

Toronto harbour facilities have been extended by a new modern terminal and a 50-ton lift; dredging operations to permit the docking of deepsea vessels and lakers have been completed. With growing business, it is planned to provide additional terminals, to construct an outer harbour and to install heavy lift equipment in the port. Grain elevators have a capacity of 4,000,000 bu.

It may be that increasing volume of business will develop Hamilton as an important inland port. Dredging is being carried out to provide 27-foot Seaway depth to selected wharves and to make Hamilton a deep-draft harbour. More extensive port facilities are being provided in terms of warehouses, berthing facilities, etc.

Windsor is also an important international port with a strong industrial background. No work is necessary to open this harbour to deep-draft ships since there is enough depth from Amherstburg Canal up the Detroit River to Lake St. Clair. Grain elevators here have a capacity of 1,250,000 bu. In Sarnia the main problem is to provide adequate facilities for larger vessels. The docking facilities require extension and plans are ready

for the construction of two piers in anticipation of heavier traffic. Two new warehouses have been constructed.

It is argued that the main difficulty in developing Kingston as a Seaway port results from the fact that the north channel, immediately outside the harbour, has a depth of only 16 feet and beyond that the river bed is of solid rock. The present small dock is being lengthened and there are dry dock facilities which could be improved for larger ships. Cornwall is planning a deep-water harbour to serve local industries which will accommodate the larger Seaway ships.

Port Arthur and Fort William, the twin ports at the head of the Lakes, have immediate plans for a new general cargo terminal for ocean and lake ships, for greater grain storage, for more dredging and for modernized iron-ore shipping facilities. There are ship-repairing facilities at these harbours and their present grain elevator capacity amounts to over 90,000,000 bu.

In addition to the grain-elevator capacities of the ports mentioned, there are also elevator storage spaces in the following St. Lawrence ports: Sorel, 3,000,000 bu.; Trois Rivières, 7,000,000 bu.; Quebec City, 4,000,000 bu. and Baie Comeau (opened July 1960), 11,868,000 bu.

Freight Traffic and Commodity Movements.—Most of the freight traffic on the Great Lakes consists of bulk shipments of commodities. The following figures show the increase since 1900 in the movement of the four most important commodities:—

<u>Year</u>	<u>Net Tons</u>	<u>Year</u>	<u>Net Tons</u>
1900.....	35,297,624	1940.....	145,216,410
1910.....	80,014,561	1950.....	177,952,946
1920.....	106,518,531	1953.....	199,696,932
1930.....	112,528,927	1959.....	144,622,380

These shipments reached a record level in 1953. Of the 144,600,000 tons shipped in 1959, about 51,500,000 tons (35.6 p.c.) were iron ore, 47,300,000 tons (32.7 p.c.) coal, 13,600,000 tons (9.4 p.c.) grain, and 26,200,000 tons (18.1 p.c.) limestone. An indication of the movements of these and other commodities in 1958 and 1959 is shown in the following statement of freight movements through the canals in the Great Lakes and the St. Lawrence River. They include all traffic passing through the canals, that is, traffic to and from all Canadian and American ports in vessels wherever registered. They exclude, however, shipments that do not pass through any of the canals—for instance, most of the limestone shipped on the Great Lakes to the steel industries does not pass through the canals and much of the soft coal from Lake Erie goes to other ports on the Great Lakes between the Welland and Sault Ste. Marie canals.

<u>Commodity</u>	<u>Net Tonnages Moving Through—</u>					
	<u>Sault Ste. Marie Canals¹</u>		<u>Welland Canal</u>		<u>St. Lawrence Canals</u>	
			<u>(in millions)</u>			
	<u>1958</u>	<u>1959</u>	<u>1958</u>	<u>1959</u>	<u>1958</u>	<u>1959</u>
Wheat.....	7.48	7.50	3.63	3.96	2.78	3.59
Other grain.....	3.82	4.02	2.97	4.27	2.03	3.32
Flour.....	0.04	0.07	0.02	0.19	0.02	0.19
Other mill products.....	0.20	0.21	0.02	0.08	0.01	0.05
Other agricultural products.....	—	0.06	0.02	0.21	0.02	0.36
Iron ore.....	54.19	47.21	4.29	7.30	1.53	6.28
Manufactured iron and steel.....	0.32	0.23	0.11	0.51	0.12	0.59
Pig iron.....	0.13	0.29	0.02	0.10	0.02	0.10
Scrap iron.....	0.15	0.14	0.17	0.25	0.06	0.07
Paper and wood pulp.....	0.21	0.16	0.51	0.59	0.29	0.37
Pulpwood.....	0.28	0.29	0.52	0.35	0.49	0.34
Anthracite coal.....	0.08	0.15	0.01	—	0.01	—
Soft coal and coke.....	6.43	7.39	4.45	4.84	1.06	1.17
Gasoline.....	0.34	0.29	0.33	0.29	0.04	0.04
Crude oil.....	0.33	—	0.33	—	0.25	0.32
Fuel oil.....	0.43	0.47	0.93	0.92	0.55	1.23
Other petroleum products.....	0.04	0.03	0.33	0.20	0.18	0.11
Sand, gravel and stone.....	1.39	1.40	0.52	0.84	0.21	0.34
All other.....	0.82	1.01	2.10	2.61	2.10	2.75
TOTALS.....	76.68	70.92	21.28	27.51	11.77	21.22

¹Including United States locks.

The total cargo passing through the three canal systems amounted to 109,800,000 tons in 1958 and 119,630,000 tons in 1959 as compared with the record reached in 1953 of about 145,000,000 tons. During 1959 approximately 88,170,000 tons moved eastward and 31,460,000 tons westward. Freight traffic on the Welland Canal was 6,230,000 tons or 29.3 p.c. higher than in 1958 and on the St. Lawrence canals 9,450,000 tons or 80.3 p.c. higher. The major increases occurred in the movement of iron ore and agricultural products.

On the other hand, traffic passing through the Sault Ste. Marie canals in 1959 was 5,830,000 tons, 7.6 p.c. lower than in 1958. A striking feature of the freight traffic picture is the volume passing through the latter canals compared with that going down river through the St. Lawrence canals, emphasizing again the difference in the amount of traffic on the Great Lakes compared with that on the St. Lawrence. Most of the traffic at Sault Ste. Marie passes through the four United States locks—of the total traffic of 70,920,000 net tons in 1959 only 1,230,000 tons passed through the Canadian lock. Noteworthy also is the predominance of iron ore shipments which amounted to more than the shipments of all other products through the Sault Ste. Marie canals. Coal and agricultural products, the latter mainly Canadian, accounted for more than 82 p.c. of the remaining traffic.

About 8,500,000 tons of the 27,500,000 tons of through and way traffic on the Welland Canal in 1959 passed from United States ports to Canadian ports. Soft coal (4,600,000 tons) and iron ore (1,800,000 tons) were the main items. Canadian coastal shipments accounted for nearly 6,700,000 tons, of which 4,380,000 tons were grain, and United States coastal trade for about 1,000,000 tons. Canadian shipments to the United States totalled 6,800,000 tons of which iron ore (5,260,000 tons) and newsprint and wood pulp (440,000 tons) were the main items. American overseas freight traffic amounted to about 3,500,000 tons and Canadian to about 550,000 tons.

Of the total traffic of 21,220,000 tons passing through the St. Lawrence canals in 1959, Canadian coastal trade accounted for nearly 8,100,000 tons of which grain from the Prairie Provinces made up nearly 3,800,000 tons, iron ore 1,280,000 tons, and petroleum and gasoline 810,000 tons. Canadian freight traffic to the United States accounted for 5,660,000 tons of which the largest item was iron ore (4,980,000 tons). American freight traffic to Canadian ports amounted to 1,760,000 tons of which soft coal (730,000 tons) was the principal commodity. About 900,000 tons were direct overseas shipments from Canada and a small amount moved in United States coastal trade. A great portion of the remaining freight traffic was United States overseas trade.

Agricultural products such as wheat, barley, corn, rye, flaxseed, flour and other mill products are the most important group of Canadian commodities moving by way of the St. Lawrence system from the Prairie Provinces to eastern parts of the country for domestic and export markets. The downbound movement of corn through the Welland and St. Lawrence canals comes from western Ontario and the United States. There is only light traffic in flour through any of the canals since this commodity is usually moved by rail.

Until the opening of the Seaway the only grain-carrying vessels reaching Montreal and Quebec were canallers with 100,000-bu. capacity but the Seaway now permits the passage of large upper lakere carrying about 800,000 bu. As a consequence, unloading facilities designed for canallers have required modification. The National Harbours Board in 1959 built eight special plants (six at Montreal and two at Quebec City) incorporating the belt-and-bucket elevator which dredges grain out of the hold and pneumatic equipment which sucks up the grain. These new plants give close to a 50-p.c. higher unloading rate (each has a rated maximum capacity of 27,000 bu. per hour) using only about half as many men as the standard type.

In July 1960 a new grain terminal was placed in operation at Baie Comeau on Quebec's north shore where ships carrying wheat from the Great Lakes may unload and pick up iron ore for the return trip. This, Canada's newest shipping centre, has an elevator capacity of 11,868,000 bu.; loading is accomplished by means of twin high-speed belts from the warehouse to 12 overhead spouts which drop grain into the ships at the rate of 100,000 bu.

hourly. The construction of this facility is expected to provide a new stimulus for the efficient movement of grain from lake ports and at the same time give ocean ships a more convenient year-round source of grain cargo.

Thus the Seaway and its facilities will likely improve the competitive position of Canadian grain in overseas markets. Although ocean-going ships may now go directly to Lakehead ports and take on grain for transfer overseas, most of the grain shipped from Port Arthur and Fort William has continued to move in lake vessels to Montreal and other ports for export; only 15,000,000 bu. were loaded in 1959 in sea-going ships at the Lakehead. Ocean-going ships are handicapped by the fact that they are not equipped to take grain quickly and thus cause congestion at the elevators.

Cheap water transportation of iron ore and limestone by way of the Great Lakes has been a major factor in the development of the steel industries of the United States and Canada. United States steel mills are located principally in the area around Lake Erie and south of Lake Michigan and Canadian mills are located at Hamilton, Welland and Sault Ste. Marie. These industries still rely primarily on iron ore from the Mesabi Range in Minnesota supplemented by ore from the Steep Rock and Algoma areas in Ontario. In 1959 total shipments of iron ore from ports on the Great Lakes amounted to nearly 55,000,000 net tons; most of these shipments were from United States ports on Lake Superior (Superior, Two Harbours, Duluth, Escanaba, etc.), a small proportion coming from the Canadian ports of Port Arthur and Michipicoten. The bulk of the ore went to United States steel plants.

The output of the United States Mesabi ore has now passed its peak and the cost of production there has been increasing. The United States steel industry, therefore, has been seeking new sources of ore to supplement the present supply and, since 1954, has imported iron ore from Venezuela and Canada in substantial quantities. The development of the tremendous reserve in the Quebec-Labrador area and the construction of the St. Lawrence Seaway provides the United States and the Canadian steel industries with a new source of iron ore, easily accessible and at a cost competitive with the present prices of ore from the Mesabi Range.

The long-term prospect of the Seaway as a main route for Quebec-Labrador ore to steel mills in Central Canada and the United States is excellent. This region in the next decade may produce about 30,000,000 tons of iron ore a year. The locks, however, offer some difficulty and it is hoped that the "twinning" of locks of the Welland Canal will allow the simultaneous handling of up and down ships. The movement of Labrador ore to the Hamilton steel mills without costly trans-shipments at intermediate ports should help to keep the price of steel down. At the same time, the Seaway will increase the competitive ability of European and United Kingdom steel producers in central Canadian markets. Before the opening of the Seaway, the additional costs of trans-shipment at St. Lawrence or Atlantic ports provided a degree of natural protection for the Canadian steel industry.

The forest group of commodities includes principally newsprint, wood pulp, pulpwood and lumber. Most of these products are shipped to the United States by rail rather than by water. Shipments of pulpwood are the most important—each year about half a million tons move down through the Sault Ste. Marie canals and about the same volume moves up through the St. Lawrence and Welland canals. About half of the pulpwood goes to the United States and the remainder to Thorold, Ont. Canadian wood pulp, like newsprint, has a substantial market in the United States but most of it moves by rail. Some wood pulp comes from Ontario and some from Quebec moves up through the St. Lawrence canals from Baie Comeau to the Chicago area. Only about a quarter of a million tons of newsprint pass through St. Lawrence canals to the United States. Lumber moving into Central Canada and the United States from British Columbia and the Maritime Provinces is largely transported by rail; British Columbia lumber also moves eastward by sea via the Panama Canal.

Most of the coal moving on the Great Lakes comes from the United States Lake Erie ports, though a small amount comes from South Chicago. As already mentioned, the greater part of these coal shipments does not go through the canals. The opening of the Seaway affected the movement of coal in Eastern Canada by allowing larger vessels to move in and out of the Great Lakes without trans-shipment. This fact improved marketing conditions for United States coal in Canada but affected adversely the coal industry in Nova Scotia, which is assisted by the Canadian Government freight subvention. There is also a relatively unimportant downbound traffic through the St. Lawrence canals in coke, which originates in the United States.

The Ontario ports of Sarnia, Toronto and Port Credit are the major Canadian distributing centres for gasoline and petroleum products in the Great Lakes region, and Montreal is the major distributing centre for the St. Lawrence region. The Seaway has opened new market potentialities for foreign oil in Central Canada. Montreal refineries are already served entirely by imports from Venezuela, the British West Indies and the Middle East. It is believed that the Seaway will increase the competitive ability of foreign oil because large oil tankers carrying loads of about 70,000 b/d will be able to supply Ontario refineries at Toronto and Sarnia, and the same may be true of other refined products.

Sand, gravel and stone represent low unit value and are usually carried in scows. They constitute a considerable volume of traffic in the Great Lakes area but are of no great importance on the St. Lawrence; only small amounts move down from the Oka region of Quebec to Montreal.

Also moving by way of the St. Lawrence system are some bulk commodities such as cement, gypsum, quartzite, fluorspar, sulphur, fertilizers, etc., which are shipped in relatively small quantities, and general merchandise such as salt, sugar, fish, packaged freight, etc. General merchandise, which consists of miscellaneous goods of varying sizes and weights, is of high unit value and provides considerable revenue to the shipowners.

Financing the Seaway.—The annual report of the St. Lawrence Seaway Authority for 1959 contains the financial statement for the first season's operation. By law, the St. Lawrence Seaway Authority and United States authorities are required to charge tolls on ships and cargoes using the Seaway, which would recover expenditures for Seaway operation and maintenance and pay interest and amortization of capital within the 50-year period. On this basis, after estimating annual cargo traffic over 50 years, a tariff of tolls has been established that would be high enough to cover the costs and yet low enough to encourage water traffic. The toll revenue earned from the Seaway, i.e., between Montreal and Lake Ontario, is divided between the United States and Canada according to the respective costs they incurred in its construction. Out of 1959 toll revenues, Canada received about 73 p.c. and the United States the remaining 27 p.c. The tolls derived from the Welland canal belong exclusively to Canada.

Total toll revenue of the St. Lawrence Seaway Authority on the Seaway in 1959 amounted to \$9,214,475, comprising \$7,105,279 assessed for transits through the new Seaway locks between Montreal and Lake Ontario, \$1,224,062 from the Welland Canal, and \$885,134 from other services. Administrative, operating and maintenance expenses amounted to \$3,953,000, resulting in a net income of \$5,261,000 before providing for interest and depreciation charges. The latter two items totalled \$11,949,000, out of which the due interest charge on loans from the Government of Canada was \$7,994,000. Thus the Canadian section of the waterway showed a loss of \$6,688,000. This substantial deficit resulted from a lower tonnage of traffic than had been forecast. At the end of March 1960, an interest payment of \$5,000,000 was made to the Federal Government of Canada.

Because of international agreement, there can be no alteration of the toll structure until 1964, when a review will take place. Any change upward in the toll structure would probably discourage some traffic. If the costs of construction of the Seaway cannot be recovered within the 50-year amortization period, then perhaps this period will be extended. Loan servicing may be deferred during the development period of the first ten years or so, and as traffic increases in volume it will generate more revenue to pay back the full cost of construction, plus interest.

Future of the Seaway.—The basic limitations of the Seaway are to be found in a navigation season of about 230 days only (from the middle of April to the middle of December) imposed by climatic conditions, and in the dimensions of the locks and canals. The latter in time will have to be adjusted to the future technological requirements of shipping. The capacity of the Welland Canal is being improved by the construction of the tie-up walls which enable ships to move quickly into the locks and to have more ships in the canal at one time.

A teletype system, installed during the winter of 1959 and connecting all locks on both the St. Lawrence and Welland systems, makes it possible to report quickly on the situation of any ship, e.g., a delay due to trouble, and to give information to port authorities as to probable arrival of ships so that berthing space may be allocated in advance for quicker loading and unloading. Moreover, with a tendency for larger vessels to use the Seaway, tonnage will increase more rapidly than the actual number of ships.

It appears now to be physically possible to keep the Seaway and its ports open throughout the year, although the maintenance of ice-free locks is as yet uneconomical. However, the more successful the Seaway becomes in terms of increased traffic and lowered transportation costs, the greater will be the incentive to lengthen the navigation season. It is expected that, with increased movement of iron ore, grain, coal, etc., about 50,000,000 tons of cargo will pass annually through the St. Lawrence Seaway within a decade. This build-up in traffic will, of course, be gradual and will result from the growth of the general economy of the mid-Continent and of Canadian foreign trade. But it can be claimed that the St. Lawrence Seaway is already performing the role for which it was designed—to be a low-cost waterway leading into the heart of the Continent, for Canada, the United States and other countries.

Subsection 5.—Marine Services of the Federal Government

The services covered in this Subsection deal with aids to navigation, including the maintenance of the St. Lawrence River Ship Channel, steamship inspection, pilotage service, sea-faring personnel and the operations of the Canadian National (West Indies) Steamships Limited.

Aids to Navigation.—Included under aids to navigation are the lighthouses and the whole system of marine danger signals on the East and West Coasts of Canada, on Hudson Bay and Strait, the St. Lawrence River and Gulf, the Mackenzie River and Arctic passages, the inland rivers and lakes, and at the entrances to harbours—a very extensive system designed to provide safe navigation in all Canadian waters. In addition, a pilotage service is maintained in waters where navigation is difficult; this service is described at p. 862. A further aid to safe navigation is found in the chains of radio signal and direction-finding stations described under Marine Navigation in Chapter XIX, pp. 897-898. Lists of aids to navigation, with the exception of very minor ones, are published by the Department of Transport.

15.—Marine Danger Signals Maintained in Canada, Years Ended Mar. 31, 1958 and 1959

NOTE.—In addition to the aids to navigation listed, approximately 10,400 unlighted buoys, balises, dolphins and beacons are maintained. Lists of marine danger signals maintained from 1929 are given in the corresponding table of previous Year Books beginning with the 1941 edition.

Type of Signal	1958	1959	Type of Signal	1958	1959
	No.	No.		No.	No.
Lights.....	3,162	3,022	Hand fog horns and bells.....	137	105
Lightships.....	4	4	Lighted and combination lighted whistling and bell buoys.....	932	1,119
Light-keepers.....	924	980	Whistling buoys.....	31	30
Fog whistles and sirens.....	25	32	Bell buoys.....	112	110
Diaphones and tyfons.....	247	267	Fog guns and bombs.....	6	4
Mechanical bells and gongs.....	49	20			

Navigable waters have been improved greatly by dredging in channels and harbours, by the removal of obstructions, and by the building of remedial works to maintain or control water levels. Incidental to these developments of navigable waters are works to guard shorelines and prevent erosion, and for the control of roads and bridges that cross navigable channels. Ice-breaking operations are carried on at the beginning and at the end of winter to prolong the season of navigation in important waters that freeze over—particularly in connection with sea-going shipping from Montreal—and to prevent flood conditions during the spring ice break-up.

St. Lawrence River Ship Channel.—This channel extends from about 40 miles below Quebec City to the foot of Lachine Canal at Montreal, a distance of 200 miles. About 113 miles of this distance is dredged channel.

Above Quebec the channel has a limiting depth of 35 feet at extreme low water and a minimum width of 550 feet, with additional width up to 1,500 feet at all curves and difficult points, and additional anchorage and turning areas. This section comprises about 100 miles of dredged channel. Below Quebec the limiting depth of dredged channel, about 13 miles in length, is 30 feet at low tide, with a width of 1,000 feet. An average tidal range of 15 feet in this area provides ample depth for any vessel using the St. Lawrence route. Above Quebec, maintenance requirements as a result of silting in this dredged channel are relatively minor but below the city silting is more pronounced because of tidal action.

The ship channel is well defined by buoys and the centre marked by range lights, permitting uninterrupted day and night navigation throughout the open season from about mid-April to early December. The movements of all shipping, weather and ice conditions and obstructions to traffic throughout the St. Lawrence waterway from Fame Point, Que., to Kingston, Ont., are recorded and made available to all concerned through a series of reporting stations known as the Marine Reporting Service.

A fleet of ice-breaking vessels is maintained to facilitate the movement of shipping between Montreal and the sea during the opening and closing of navigation, and to alleviate flood conditions in low-lying areas.

16.—Seasons of Open Navigation on the St. Lawrence Ship Channel, 1940-59

NOTE.—Figures from 1882 are given in the corresponding table of previous Year Books beginning with the 1934-35 edition.

Year	Channel Open, Quebec to Montreal ¹	First Arrival from Sea, Montreal Harbour	Last Departure for Sea, Montreal Harbour	Year	Channel Open, Quebec to Montreal ¹	First Arrival from Sea, Montreal Harbour	Last Departure for Sea, Montreal Harbour
1940.....	Apr. 23	Apr. 24	Dec. 5	1950.....	Apr. 18	Apr. 18	Dec. 7
1941.....	" 14	" 19	" 17	1951.....	" 11	" 13	" 13
1942.....	" 17	May 2	" 16	1952.....	" 12	" 13	" 10
1943.....	" 29	" 24	" 13	1953.....	Mar. 30	" 2	" 21
1944.....	" 20	Apr. 21	" 9	1954.....	Apr. 15	Mar. 30	" 15
1945.....	" 1	" 9	" 3	1955.....	" 17	Apr. 5	" 15
1946.....	" 1	" 12	" 18	1956.....	" 13	" 2	" 17
1947.....	" 16	" 19	" 5	1957.....	" 8	" 4	" 18
1948.....	" 10	" 19	" 10	1958.....	" 6	Mar. 30	" 23
1949.....	" 7	" 7	" 15	1959.....	" 13	Apr. 1	" 20

¹ "Channel Open" means the route can be navigated although there may be floating ice in the river.

Steamship Inspection.—The Steamship Inspection Service was established by authority of the Canada Shipping Act. Its functions include the approval of design of the hulls, machinery and equipment of ships; inspection during construction; periodic inspection and the issue of inspection certificates; the assignment of load lines; the conditions under which dangerous goods may be carried in ships; the protection against accident of workers

employed in loading and unloading ships; the prevention from pollution of Canadian territorial waters by oil from ships; and the certification of marine engineers. The Board also looks after the interests of the Federal Government in schools for marine engineers.

The Chairman and the Board of Steamship Inspection are located at Ottawa and there are field offices in the principal ocean and inland ports.

**17.—Statistics of Steamship Inspections, by Inspection Division, Years Ended
Mar. 31, 1958 and 1959**

Division	Vessels Registered or Owned in Canada				Vessels Registered or Owned Elsewhere			
	1958		1959		1958		1959	
	No.	gross tonnage	No.	gross tonnage	No.	gross tonnage	No.	gross tonnage
St. John's, Nfld.....	209	49,452	205	36,538	—	—	—	—
North Sydney, N.S.....	55	25,035	70	12,613	2	657	2	657
Halifax, N.S.....	226	155,771	161	97,944	—	—	—	—
Saint John, N.B.....	51	36,614	43	24,012	1	2,338	—	—
Quebec, Que.....	134	72,880	137	68,495	2	7,526	6	27,902
Sorel, Que.....	73	45,730	81	72,286	—	—	—	—
Montreal, Que.....	100	162,432	109	188,025	2	5,972	1	14,217
Kingston, Ont.....	96	105,068	98	145,028	—	—	—	—
Toronto, Ont.....	140	264,298	139	341,759	8	1,995	1	60
St. Catharines, Ont.....	58	105,592	52	125,180	—	—	—	—
Collingwood, Ont.....	43	72,158	30	62,993	—	—	—	—
Midland, Ont.....	70	106,141	76	141,132	—	—	—	—
Port Arthur, Ont.....	46	38,884	51	42,969	—	—	—	—
Vancouver, B.C.....	413	87,671	345	100,383	9	35,187	4	27,248
Victoria, B.C.....	64	58,658	68	44,528	—	—	—	—
Totals.....	1,778	1,356,384	1,665	1,503,785	24	53,675	14	70,084

Pilotage.—Pilotage service functions under the provisions of Part VI of the Canada Shipping Act. Wherever a pilotage district has been created by the Governor in Council, qualified pilots are licensed by the pilotage authority of the district. There are in Canada 42 pilotage districts in nine of which the Minister of Transport is the pilotage authority (see Table 18); in each of the other districts the authority is a local body appointed by the Governor in Council.

18.—Pilotage Service, by Pilotage District, Years Ended Mar. 31, 1957 and 1958

District	1957		1958	
	Ships	Net Registered Tonnage	Ships	Net Registered Tonnage
	No.		No.	
Bras d'Or Lake, N.S.....	174	461,856	240	660,744
Sydney, N.S.....	2,394	4,154,763	2,702	4,610,314
Halifax, N.S.....	3,416	13,689,367	3,047	12,483,470
Saint John, N.B.....	1,275	3,762,258	1,261	3,723,460
Quebec, Que.....	5,951	18,538,779	6,172	19,818,438
Montreal, Que.....	10,616	24,556,354	10,284	33,999,632
St. Lawrence-Kingston-Ottawa, Ont.....	3,228	—	2,925	—
Churchill, Man.....	106	193,879	136	240,052
British Columbia.....	5,188	19,263,243	5,133	21,983,302
Totals.....	32,348	84,620,499	31,903	97,519,412

In addition there are 21 districts in Newfoundland under the local pilotage authority. These districts continued to be administered under Newfoundland statutes after union with Canada (Mar. 31, 1949). Part VI of the Canada Shipping Act with respect to pilotage has not been proclaimed in force in Newfoundland.

Seamen Engaged and Discharged.—Seamen engaged and discharged at Canadian ports under the provisions of the Canada Shipping Act during the years ended Mar. 31, 1949-58 are shown in Table 19.

19.—Seamen Engaged and Discharged at Canadian Ports, Years Ended Mar. 31, 1949-58

NOTE.—Figures from 1918 are given in the corresponding table of previous Year Books beginning with the 1941 edition.

Year	Seamen Engaged	Seamen Discharged	Year	Seamen Engaged	Seamen Discharged
	No.	No.		No.	No.
1949.....	50,379	49,544	1954.....	42,837	43,142
1950.....	43,677	43,194	1955.....	43,292	41,030
1951.....	40,241	40,535	1956.....	44,142	44,333
1952.....	43,724	40,664	1957.....	39,717	40,347
1953.....	42,723	36,610	1958.....	22,578	30,100

Canadian National (West Indies) Steamships Limited.—In conformity with the Canada-West Indies Trade Agreement of 1926 (SC 1926, c. 16) the Federal Government has provided direct steamship services to the West Indies through the medium of Canadian National (West Indies) Steamships Limited.

The eight vessels owned by the Company ceased active operations on July 4, 1957, as a result of a strike called by the Seafarers International Union. Prolonged negotiations failed to end the strike and it was decided to sell the fleet and wind up the affairs of the Company. The vessels were sold in August 1958 to the Banco Cubano del Comercio Exterior of Havana, Cuba.

20.—Financial Statistics of Canadian National (West Indies) Steamships Limited, 1949-58

NOTE.—Figures for the years 1929-38 are given in the 1942 Year Book, p. 620; for 1939-44 in the 1950 edition, p. 777; and for 1945-48 in the 1956 Year Book, p. 844.

Year	Operating Revenues	Operating Expenses	Operating Profit or Loss	Other Income (net)	Interest	Income Surplus or Deficit
	\$	\$	\$	\$	\$	\$
1949.....	6,595,007	6,582,608	+12,399	88,064	560,961	—460,498
1950.....	5,124,200	5,725,632	—601,432	133,127	560,462	—1,028,767
1951.....	6,808,478	6,840,054	—31,576	130,368	565,784	—466,992
1952.....	7,449,247	7,122,971	+326,276	145,065	475,250	—3,909
1953.....	4,509,342	5,331,788	—822,446	170,866	475,250	—1,126,830
1954.....	5,105,082	5,424,983	—319,901	166,741	475,250	—628,410
1955.....	5,946,605	5,995,684	—49,079	77,780	124,665	—95,984
1956.....	6,125,470	6,052,570	+72,900	—	49,619	+23,281
1957.....	4,012,162	4,617,528	—605,364	—	43,486	—648,850
1958.....	—	1,114,726	—1,114,726	—	37,228	—1,151,954

Section 2.—Financial Statistics of Waterways

The principal statistics available on the cost of facilities for water-borne traffic consist of the record of public expenditure on waterways. Such expenditure may be classified as capital expenditure, or investment and expenditure for maintenance and operation. Revenue from operation is also recorded. The major part of the capital expenditure for the permanent improvement of waterways is provided by the Federal Government. Capital expenditure by municipalities and private capital expenditure is confined almost entirely to terminal or dockage facilities. On the other hand, investment in shipping has come almost entirely from private sources. No figures are available regarding private investment in shipping except those appearing in the reports of the operating companies that cover only a portion of the field. There are no statistics showing the revenue of ship operators from passenger and freight traffic.

Capital Expenditure.—The only figures available of federal capital expenditure on Canadian waterways are those compiled from the *Public Accounts* and the annual reports of the Departments of Transport, Public Works and Finance. It must be realized that such expenditure cannot be regarded as any indication of the present worth of the undertakings represented. The cost of building canals and other waterways and permanent works to facilitate water transportation in Canada is represented in such reports at their original book values, no deductions having been made from the cumulative totals for depreciation from year to year or for abandonment of works that have been superseded such as, for instance, the first Welland Canals. To this extent such figures are an overstatement of the present value of the works in use. The figures are further limited by the fact that they do not include the cost of maintenance and improvements or the operation of these works, such charges having been made to the consolidated deficit account as annual expenditure and not to capital account. Table 21 shows that capital expenditure on canals, marine services and miscellaneous water-transport facilities reached the grand total of \$455,311,994 by the end of March 1958, but this must be interpreted with the above qualifications in mind. In Table 22 the capital values of the fixed assets administered by the National Harbours Board are shown as at Dec. 31, 1957 and 1958, and are additional to the capital expenditure of Table 21. Figures in Table 22 reflect the capital situation in regard to the national harbours of Canada far better than do those of Table 21 for waterways and facilities, inasmuch as they include all buildings, machinery and durable plant improvements; they also have been subject to deductions for depreciation and the scrapping or abandonment of plant and therefore more nearly approach the present value of the properties under the administration of the National Harbours Board.

21.—Capital Expenditure of the Federal Government on Canals, Marine Services and Miscellaneous Water-Transport Facilities, as at Mar. 31, 1957 and 1958

NOTE.—Compiled from annual reports of the Department of Transport and the *Public Accounts*.

Item	Expenditure		Total to Mar. 31, 1958	Item	Expenditure		Total to Mar. 31, 1958
	Years Ended Mar. 31—				Years Ended Mar. 31—		
	1957	1958			1957	1958	
	\$	\$	\$		\$	\$	\$
Canals.....	Cr. 32,008	Cr. 17,482	242,086,867	Canals—concluded			
Quebec Canals—	—	—		St. Lawrence Ship			
Beauharnois (old).....	—	—	1,606,104	(surveys).....	—	—	133,897
Carillon and				Sault Ste. Marie.....	—	—	4,935,809
Grenville.....	—	—	4,191,727	Trent.....	Cr. 8,395	—	19,938,806
Chambly				Murray.....	—	—	1,248,947
(Richelieu R.).....	—	—	780,620	Welland Ship Canal.	Cr. 11,206	Cr. 10,132	131,669,504
Lachine.....	Cr. 3,201	—	13,208,670	Prior Welland			
Lake St. Francis.....	—	—	75,907	Canals.....	Cr. 9,206	Cr. 7,350	27,225,713
Lake St. Louis.....	—	—	298,176	St. Peters, N.S.....	—	—	648,547
Soulanges.....	—	—	7,897,119	Canals generally.....	—	—	34,967
Ste. Anne.....	—	—	1,320,216	Adjustment			
St. Ours.....	—	—	735,964	suspense.....	—	—	165,361
Ontario-St. Lawrence				Marine Services.....	8,748,304	11,487,118	164,701,295
Canals—				Marine Service			
Cornwall.....	—	—	7,233,823	steamers.....	5,249,172	8,402,433	41,500,796
Williamsburg				River St. Lawrence			
Canals.....	—	—	1,334,552	Ship Channel—			
Farran Point.....	—	—	877,090	contract dredging	3,499,132	3,084,685	123,200,499
Rapide Plat.....	—	—	2,159,881	Miscellaneous			
Galop.....	—	—	6,143,468	Facilities.....	—	1,190	48,523,832
Galop Channel.....	—	—	1,039,896				
North Channel.....	—	—	1,995,143				
River Reaches.....	—	—	483,830				
Rideau.....	—	—	4,213,531	Grand Totals..	8,716,296	11,470,826	455,311,994
Tay.....	—	—	489,599				

22.—Capital Values of Fixed Assets Administered by the National Harbours Board, as at Dec. 31, 1957 and 1958

NOTE.—Compiled from the annual reports of the National Harbours Board.

Item	1957	1958	Item	1957	1958
	\$	\$		\$	\$
Harbour dredging.....	12,206,828	16,487,601	Floating and shore equipment.....	3,139,055	3,254,506
Land and land improvements.....	15,889,073	15,945,396	Jacques Cartier Bridge.....	20,084,381	20,907,371
Wharves and piers.....	103,609,065	108,492,733	Works under construction.....	20,494,797	37,489,541
Permanent sheds.....	30,636,131	31,382,082			
Railway systems.....	6,611,955	6,587,118	Sundry expenditure—undistributed.....	4,448,570	4,448,570
Grain elevator systems.....	49,226,388	49,912,117			
Cold storage systems.....	6,186,553	6,302,012			
Harbour buildings, service plants and equipment.....	7,878,119	7,975,785	Totals.....	230,410,915	309,184,832

23.—Amounts Advanced by the Federal Government to the National Harbours Board for Capital Expenditure, 1957 and 1958

NOTE.—Compiled from the annual reports of the National Harbours Board.

Harbours and Properties	1957	1958	Harbours and Properties	1957	1958
	\$	\$		\$	\$
Halifax.....	2,124,686	627,626	Montreal.....	11,578,032	16,948,220
Saint John.....	394,667	112,673	Churchill.....	240,050	24,571
Chicoutimi.....	—	8,130	Vancouver.....	140,425	3,337,879
Quebec.....	1,998,106	3,531,909			
Trois Rivières.....	227,526	1,009,424	Totals.....	16,703,492	25,600,432

Waterways Expenditure and Revenue on Consolidated Fund Account.—

Expenditure under this heading (Tables 24 to 26) is mainly for the operation and maintenance of various facilities for water transport but, unfortunately, the line between operation and maintenance expenditure is not as finely drawn as is desirable. Revenue in connection with waterways of the Department of Transport and the Department of Public Works is shown in Table 27.

To facilitate water transportation, the Federal Government expends annually, in addition to the recurrent expenditure shown here, a considerable amount to cover deficits of the Canadian National (West Indies) Steamships Limited and of the National Harbours Board, and for mail subsidies and steamship subventions as shown in Table 29. Operating expenditure and revenue of facilities administered by the National Harbours Board are shown separately in Table 28.

24.—Expenditure on Canals charged to Consolidated Deficit Account, Years Ended Mar. 31, 1956 to 1958

NOTE.—Compiled from the annual reports of the Department of Transport.

Canal	EXPENDITURE ON IMPROVEMENTS			
	Years Ended Mar. 31—			Total to Mar. 31, 1958
	1956	1957	1958	
	\$	\$	\$	\$
Main Canals—				
Quebec Canals—				
Beauharnois (old).....	2,606	—	—	466,058
Hungry Bay and Ste. Barbe Dykes.....	—	—	—	55,659
Lachine.....	684,533	143,947	291,921	15,672,588
Lake St. Francis.....	—	—	—	55,324
Quebec Dredging Fleet.....	930	—	—	208,623
Soulanges.....	50,593	22,361	49,132	1,067,918
Superintending Engineer.....	—	1,552	—	3,726

**24.—Expenditure on Canals charged to Consolidated Deficit Account, Years Ended
Mar. 31, 1956 to 1958—concluded**

Canal	EXPENDITURE ON IMPROVEMENTS—concluded			
	Years Ended Mar. 31—			Total to Mar. 31, 1958
	1956	1957	1958	
	\$	\$	\$	\$
Main Canals—concluded				
Ontario-St. Lawrence Canals—				
Cornwall.....	97,063	298,474	100,090	2,671,988
Williamsburg.....	243,618	110,528	23,476	1,588,821
Welland Canals—				
Welland Ship.....	431,189	474,274	648,493	4,828,208
Prior Welland Canal.....	—	—	—	2,650,121
Sault Ste. Marie.....	239,113	183,248	109,270	1,239,152
Administration.....	—	—	—	336,906
Secondary Canals—				
Carillon and Grenville.....	85,061	32,639	18,122	1,390,013
Chambly (Richelieu R.).....	25,574	34,098	40,027	1,471,623
Rideau and Tay.....	67,935	260,551	114,718	1,969,405
Ste. Anne.....	2,557	1,864	—	242,482
St. Ours (Richelieu R.).....	11,384	5,004	—	238,905
St. Peters, N.S.....	129,538	22,807	—	1,118,639
Canso, N.S.....	4,291	5,822	—	10,113
Trent.....	232,417	122,459	136,926	6,139,775
Murray.....	17,679	—	—	260,599
Miscellaneous—				
Bay Verte-Chignecto.....	—	—	—	44,388
Culbute lock and dam.....	—	—	—	60,923
Surveys and inspections.....	—	—	—	572,990
Canals generally.....	—	—	—	190,509
Totals.....	2,326,081	1,719,628	1,532,175	44,555,456
EXPENDITURE ON OPERATION AND MAINTENANCE				
Administration—Ottawa.....	125,230	125,064	137,162	..
Quebec Canals—				
Head Office.....	63,850	70,701	80,094	..
Beauharnois (old).....	7,432	5,777	6,744	..
Carillon and Grenville.....	137,085	145,482	156,085	..
Chambly (Richelieu R.).....	212,962	220,704	241,475	..
Hungry Bay and Ste. Barbe Dykes.....	5,279	5,569	5,318	..
Lachine.....	917,245	935,183	1,013,774	..
Quebec dredging fleet.....	25,800	32,575	32,493	..
Soulanges.....	472,864	509,172	537,571	..
Ste. Anne.....	29,259	30,208	32,304	..
St. Ours (Richelieu R.).....	31,616	34,214	36,656	..
Ontario-St. Lawrence Canals—				
Head Office.....	119,165	127,021	151,936	..
Cornwall.....	529,509	559,330	626,756	..
Williamsburg.....	278,090	309,729	407,671	..
Canso, N.S.....	22,181	48,456	62,931	..
St. Peters, N.S.....	46,027	46,707	50,559	..
Rideau and Tay.....	465,139	475,923	503,196	..
Sault Ste. Marie.....	195,043	216,779	225,682	..
Trent.....	507,129	539,298	578,944	..
Murray.....	34,395	37,385	35,865	..
Welland.....	1,780,344	1,994,655	2,165,194	..
Totals.....	5,985,644	6,469,832	7,088,410	..

25.—Marine Service Expenditure charged to Consolidated Deficit Account, Years Ended Mar. 31, 1957 and 1958

NOTE.—Compiled from annual reports of the Department of Transport.

Marine Services	1957	1958	Marine Services	1957	1958
	\$	\$		\$	\$
Marine Services—			Steamship Inspection.....	761,689	867,753
Administration, including			Marine Service Steamers—		
agencies.....	685,919	744,182	Administration, operation		
Aids to navigation (con-			and maintenance.....	7,587,588	8,731,069
struction, maintenance			Marine Reporting Service....	132,785	133,142
and supervision).....	6,928,548	8,325,652	River St. Lawrence Ship		
Nautical Services—			Channel Service—		
Administration, operation			Administration, operation		
and maintenance including			and maintenance.....	885,016	928,539
grants.....	468,827	462,491			
Pilotage Service—			Totals.....	18,118,020	21,040,975
Administration.....	628,610	692,457			
Construction.....	37,238	153,890			
Pensions to former pilots....	1,800	1,800			

26.—Expenditure on Waterways (Harbours, Rivers, Roads and Bridges) charged to Consolidated Fund Account by Department of Public Works, Year Ended Mar. 31, 1958

NOTE.—Compiled from the annual reports of the Departments concerned by the Comptroller of the Treasury, Department of Finance. Excludes expenditures on harbours administered by the National Harbours Board as shown in Table 23.

Province or Territory	Dredging ¹	Con- struction	Improve- ments and Repairs	Staff and Sundries	Total
	\$	\$	\$	\$	\$
Newfoundland.....	684,364	2,798,776	388,348	87,013	3,958,501
Prince Edward Island.....	341,370	1,517,266	123,268	32,383	2,014,287
Nova Scotia.....	873,785	2,564,754	560,983	91,756	4,091,278
New Brunswick.....	1,304,693	621,626	163,058	143,764	2,233,141
Quebec.....	993,161	3,291,371	871,505	302,621	5,458,058
Ontario.....	813,195	7,033,187	288,093	176,366	8,310,841
Manitoba.....	192,181	24,723	40,834	38,754	296,492
Saskatchewan.....	—	37,809	175	847	38,831
Alberta.....	99,306	79,920	12,162	139,841	331,229
British Columbia.....	1,921,378	3,809,058	531,644	484,043	6,746,123
Yukon and Northwest Territories.....	81,171	202,883	8,282	78,347	370,683
Totals.....	7,304,604	21,981,373	2,988,352	1,575,735	33,850,064

¹ Includes expenditures for dredging plants.

27.—Revenue of the Federal Government in connection with Waterways, Years Ended Mar. 31, 1957 and 1958

NOTE.—Compiled from annual reports of the Department of Transport and the Public Accounts.

Item	1957	1958	Item	1957	1958
	\$	\$		\$	\$
Department of Transport			Department of Transport		
			—continued		
Canal Services.....	1,758,194	1,967,235	Canal Services—continued		
Lachine.....	360,213	352,087	St. Lawrence Waterways—		
Soulanges.....	2,654	4,832	Cornwall Area.....	28,866	40,888
Chambly.....	5,430	6,830	Williamsburg.....	13,022	20,067
St. Anne.....	330	452	St. Peters, N.S.....	710	905
St. Ours.....	467	528	Canso, N.S.....	—	71
Carillon and Grenville.....	1,206	1,248	Welland.....	1,037,576	1,116,981
Beauharnois.....	49,160	73,447	Sault Ste. Marie.....	3,289	3,189
Cornwall.....	59,046	71,624	Rideau and Tay.....	21,634	98,303

**27.—Revenue of the Federal Government in connection with Waterways, Years Ended
Mar. 31, 1957 and 1958—concluded**

Item	1957	1958	Item	1957	1958
\$	\$		\$	\$	
Department of Transport —continued			Department of Transport —concluded		
Canal Services—concluded			Marine Services—concluded		
Trent.....	98,255	113,501	Refunds previous year's expenditure.....	18,890	34,713
Murray.....	966	928			
Dredging Fleet.....	5,880	—	Board of Transport		
Sale of Publications.....	1	—	Commissioners.....	2,339	2,792
Interest on loan to City of Montreal (St. Remi Tunnel)...	41,885	40,927	Licences to ships.....	1,455	1,966
Miscellaneous.....	571	950	Sale of publications.....	884	826
Refunds of previous year's expenditure.....	27,043	19,477			
Marine Services.....	944,069	1,034,214	Totals, Department of Transport.....	2,704,602	3,004,241
Fines and forfeitures.....	14,441	12,733			
Steamship Inspection.....	170,419	167,087	Department of Public Works		
Wharf revenue.....	490,084	565,610	Earnings of Dry Docks.....	333,593	365,456
Harbour dues.....	131,750	138,585	Champlain Dock, Lauzon.....	157,793	120,631
Measuring Surveyor's fees.....	335	429	Lorne Dock, Lauzon.....	70,304	62,483
Examinations—Masters' and Mates' fees.....	7,191	8,168	Esquimalt new dock.....	102,228	179,125
Pilots' licence fees (pilotage).....	338	317	Seikirk repair slip.....	3,268	3,217
Pilotage dues.....	10,202	8,090			
Shipping fees.....	4,504	4,022	Works and Plants Leased.....	55,107	88,752
Marine Steamer earnings.....	26,228	16,412	Kingston dry dock.....	12,100	12,100
Signal station dues.....	1,504	1,432	Ferry privileges.....	258	641
Rentals—water lots and lighthouse sites.....	34,141	29,935	Dredges and plants.....	42,749	76,011
Rentals—River St. Lawrence Ship Channel Service.....	9,384	16,728	Rents from water lots, etc.....	43,562	43,346
Sale of land, buildings, etc.....	582	350	Refunds against expenditure reported in previous years.....	16,321	82,741
Merchant seamen's identity certificates.....	2,137	2,656	Sundry receipts, test borings, etc.....	1,547	4,974
Miscellaneous.....	21,939	26,947	Totals, Department of Public Works.....	450,130	585,269

**28.—Operating Revenue and Expenditure of Harbours, Elevators and Bridges
under the National Harbours Board, 1957 and 1958**

Harbour and Year	Operating Revenue	Operating Expend- iture	Operating Income	Harbour and Year	Operating Revenue	Operating Expend- iture	Operating Income
\$	\$	\$	\$	\$	\$	\$	\$
Halifax—				Montreal—			
1957.....	1,947,120	1,432,788	514,332	1957.....	8,670,352	5,457,114	3,213,238
1958.....	1,869,423	1,555,546	303,877	1958.....	9,319,870	6,076,232	3,243,638
Saint John—				Prescott Elevator—			
1957.....	947,312	880,078	67,234	1957.....	1,089,935	502,142	587,793
1958.....	794,814	908,112	-113,298	1958.....	1,452,686	625,883	826,803
Chicoutimi—				Port Colborne Elevator—			
1957.....	110,534	32,022	78,512	1957.....	732,607	470,134	262,473
1958.....	110,486	39,499	70,987	1958.....	906,324	527,868	378,456
Quebec—				Churchill—			
1957.....	1,972,806	1,929,407	43,399	1957.....	1,097,120	918,842	178,278
1958.....	2,047,749	1,676,260	371,489	1958.....	1,343,964	932,342	411,622
Trois Rivières—				Vancouver—			
1957.....	406,177	69,407	336,770	1957.....	4,101,410	2,280,285	1,841,125
1958.....	414,098	77,117	336,981	1958.....	3,721,723	2,014,226	1,707,497
Jacques Cartier Bridge (Montreal)							
1957.....	2,228,438	318,392	1,910,046				
1958.....	2,104,794	353,679	1,751,115				

Shipping Subsidies.—Table 29 shows the amounts of steamship subventions paid in connection with contracts made under statutory authority for coastal and inland water-shipping services. The payment of these subventions is administered by the Canadian Maritime Commission.

29.—Steamship Subventions, Years Ended Mar. 31, 1958 and 1959

Service	1958	1959
	\$	\$
Pacific Coast Services—		
Vancouver and northern ports of British Columbia and Queen Charlotte Islands.....	249,167	—
Vancouver and northern British Columbia ports.....	82,400	181,001
Victoria and west coast of Vancouver Island.....	—	76,164
Eastern Services—		
Baddeck and Iona, N.S.....	17,500	17,500
Campobello, N.B., and Lubec, Maine.....	8,600	8,600
Cross Point, Que., and Campbellton, N.B.....	32,000	49,893
Dalhousie, N.B., and Miguasha, Que.....	27,500	27,500
Grand Manan and the mainland, N.B.....	95,000	95,000
Halifax, Canso and Guysborough, N.S.....	26,000	—
Halifax, Canso, Guysborough and Isle Madame.....	—	30,000
Halifax, Tor Bay, Isle Madame, N.S., and ports on the west coast of Cape Breton, N.S.....	23,000	—
Ile aux Coudres and Les Eboulements, Que.....	15,000	15,000
Ile aux Grues and Montmagny, Que. (summer).....	3,300	3,300
Ile aux Grues and Montmagny, Que. (winter).....	1,700	1,700
Mulgrave and Canso, N.S.....	54,900	54,900
Mulgrave, Queensport and Isle Madame, N.S.....	32,500	32,500
Murray Bay and north shore of the St. Lawrence, Que. (winter).....	50,000	120,000
Owen Sound and ports on Manitoulin Island and Georgian Bay, Ont.....	98,322	100,000
Peelee Island and the mainland, Ont.....	42,500	42,500
Pictou, Mulgrave and Cheticamp, N.S.....	17,000	15,044
Pictou, N.S., Charlottetown, P.E.I., and the Magdalen Islands, Que.....	174,000	174,000
Prescott, Ont., and Ogdensburg, N.Y. ¹	—	—
Prince Edward Island and Newfoundland.....	80,000	97,305
Prince Edward Island and Nova Scotia.....	175,000	535,748
Quebec, Natashquan and Harrington, Que.....	607,000	607,000
Quebec or Montreal, Gaspé and the Magdalen Islands, Que.....	189,000	189,000
Rimouski, Matane and ports on the north shore of the St. Lawrence River, Que.....	125,500	125,500
Rivière du Loup and St. Siméon, Que.....	21,000	17,850
Saint John, N.B., Tiverton, Freeport, Westport and Yarmouth, N.S.....	33,000	33,000
Sorel and Ile St. Ignace, Que.....	43,000	43,000
Sydney and Bay St. Lawrence.....	45,000	45,000
Newfoundland Coastal Steamship Services.....	2,740,597	2,990,878
Totals.....	5,109,486	5,728,883

¹ Annual subsidy for this service is \$15,000 refundable in whole or in part. Full refunds have been made to date.

PART V.—CIVIL AIR TRANSPORT*

Section 1.—Administration and Development

Historical Developments.—Canada's aviation history dates back to 1909 when the *Silver Dart*, piloted by Jack McCurdy (Hon. J. A. D. McCurdy, former Lieutenant-Governor of Nova Scotia), flew at Baddeck, N.S. This was the first aeroplane flight by a British subject in the British Empire.

There was little aviation development in Canada until World War I. Following the War, many of Canada's wartime aviators assisted in developing air transportation services into inaccessible areas, air forestry patrols and intercity air services. During this period the flying clubs movement received government assistance in the training of pilots and engineers required by Canada's civil aviation industry.

World War II was a period of intensive construction of airports and aerodromes to meet the requirements for the training of airmen under the British Commonwealth Air Training Plan. At the end of the War, many Service-trained Canadian airmen turned

* Sections 1 and 2 of this Part were revised in the Department of Transport and Section 3, except where otherwise indicated, in the Transportation and Public Utilities Section, Public Finance and Transportation Division, Dominion Bureau of Statistics. For military air transportation, see Chapter XXVI on Defence of Canada.

to commercial flying and were absorbed by existing operating companies or helped to develop other flying services. Transatlantic air services were inaugurated by the Department of Transport during the War and were turned over to Trans-Canada Air Lines which was created by Act of Parliament in 1937 to provide for the development of a government-controlled transcontinental air service for regular scheduled operations. Canadian Pacific Air Lines was created by the amalgamation of small commercial operators for the servicing of Canada's northland. In 1949 the Canadian Pacific Air Lines was designated to provide transpacific services on behalf of Canada and in the spring of 1959 began the operation of one daily transcontinental flight each way between Montreal and Vancouver. Current operations of TCA and CPA are covered on pp. 871-872.

The Control of Civil Aviation.—The control of civil aviation in Canada is under the jurisdiction of the Federal Government and is administered under the authority of the Aeronautics Act 1919 and amendments thereto. The Aeronautics Act is in three parts. Broadly speaking, Part I deals with the technical side of civil aviation comprising matters of registration of aircraft, licensing of airmen, the establishment and maintenance of airports and facilities for air navigation, air traffic control, accident investigation and the safe operation of aircraft. This Part of the Act is administered by the Director of Civil Aviation under the supervision of the Assistant Deputy Minister, Air Services, Department of Transport. Part II of the Act deals with the social and economic aspects of commercial air services and assigns to the Air Transport Board certain regulatory functions of commercial air services (see p. 806). Part III deals with matters of government internal administration in connection with the Act.

Weather Services.—Weather Services are provided by the Meteorological Branch of the Department of Transport to meet the increasing demands of agriculture, aviation, industry and the general public. The expanding weather services required by the Department of National Defence, both in Canada and for Canadian Armed Forces abroad, are a major responsibility of the Branch. A central analysis office is operated in Montreal together with 58 forecast offices across Canada, two on shipboard, and four in Europe. Forecast offices are linked by 39,220 miles of teletype and radio-teletype circuits, and by a national facsimile system covering a total of 13,800 airline miles. At Jan. 1, 1960, the Branch maintained 258 synoptic stations taking six-hourly observations, a network of 32 radiosonde stations including five in the extreme Arctic operated jointly with the United States, 71 stations recording upper winds, and 1,573 climatological stations. One ocean weather station taking weather observations every three hours in the Pacific, 1,000 miles west of Vancouver, is maintained under International Agreement. (See also p. 78.)

Air Industries and Transport Association.—Commercial flying schools that are members of the Air Industries and Transport Association numbered 57 at the end of 1958. During that year the number of students instructed and graduated as private pilots was 1,240, the number graduated as commercial pilots was 150 and 61,010 instructional hours were flown.

Royal Canadian Flying Clubs.—At the end of 1959 there were 41 flying clubs connected with the Royal Canadian Flying Clubs Association. The total membership was 10,562 and the aircraft available for instructional purposes numbered 207. During the year, 1,711 students were instructed and graduated as private pilots and 124 students were graduated as commercial pilots. Instructional hours of flying totalled 109,502.

International Air Agreements.—The position of Canada in the field of aviation as well as its geographical location makes imperative co-operation with other nations of the world engaged in international civil aviation. Canada took a major part in the original discussions that led to the establishment of the International Civil Aviation Organization (ICAO) which has headquarters at Montreal, Que. A special article on The International Civil Aviation Organization and Canada's Participation Therein appears in the 1952-53 Year Book, pp. 820-827.

In recent years Canada has been a signatory to agreements concerning civil aviation with Australia, New Zealand, Belgium, Denmark, France, Ireland, Japan, Mexico, the Netherlands, Norway, Peru, Portugal, Sweden, Switzerland, the United Kingdom and the United States.

Section 2.—Air Services

Air transport services may be grouped into two broad classes—Scheduled Services and Non-scheduled Services. Services in the first group are operated by air carriers who offer public transportation of persons, mails and/or goods by aircraft, serving designated points in accordance with a service schedule and at a toll per unit. The second group includes the following:—

- (1) Regular Specific Point Air Services—operated by air carriers who offer public transportation of persons, mails and/or goods by aircraft serving designated points on a route pattern and with some degree of regularity, at a toll per unit.
- (2) Irregular Specific Point Air Services—operated by air carriers who offer public transportation of persons, mails and/or goods by aircraft, from a designated base, serving a defined area or a specific point or points, at a toll per unit.
- (3) Charter Air Services—operated by air carriers who offer public transportation of persons and/or goods by aircraft from a designated base, at a toll per mile or per hour for the charter of the entire aircraft, or at such other tolls as may be permitted by the Board.
- (4) Contract Air Services—operated by air carriers who do not offer public transportation but who transport persons and/or goods solely in accordance with one or more specific contracts.
- (5) Flying Clubs—operated by air carriers incorporated as non-profit organizations for the purpose of furnishing flying training and recreational flying to club members.
- (6) Specialty Services—operated by air carriers for purposes not provided for by any other class, such as flying training, recreational flying, aerial photography and survey, aerial pest control, aerial advertising, aerial patrol and inspection, etc.

Current operations of the two major air lines forming the nucleus of Canada's freight and passenger air service are outlined below.

Trans-Canada Air Lines.—During 1959, TCA flew 1,828,902,000 passenger miles, carrying 3,209,197 passengers. Ton-miles of air freight totalled 15,100,000, air express 2,653,000 and mail 10,905,000.

During the year the company introduced non-stop Viscount service between Regina and Edmonton and extended Viscount operations to Tampa, Florida, from Toronto. In May, direct service began between Canada and Austria with a weekly flight to Vienna, while winter service to Antigua, West Indies Federation, was extended on a year-round basis. Transcontinental service was increased to 12 daily round-trip flights during summer months, representing 700 available seats in each direction, while as many as 18 weekly return flights were operated across the North Atlantic between Canada and the United Kingdom and Continental Europe. At the year's end, TCA was serving 39 Canadian cities, and six centres in the United States, as well as the British Isles, France, Germany, Belgium, Switzerland and Austria, Bermuda and the islands of the Caribbean over 30,500 miles of air routes.

TCA's fleet in service at the end of 1959 consisted of 49 Viscounts, 13 Super Constellations, 21 North Stars and nine DC-3's. Its working force numbered 10,452.

The airline took delivery of the first of six ordered Douglas DC-8 jets on Feb. 7, 1960, and the first of 20 Vickers Vikings on order was delivered to the airline in July for service on domestic and trans-border routes beginning in October. Combined with the long-range DC-8's and the short-range Viscounts, the Vikings will give TCA an all-four-engined, turbine-powered fleet in 1961, probably the first in the air transportation industry.

1.—Passenger, Freight and Mail Traffic of Trans-Canada Air Lines, 1950-59

SOURCE: Trans-Canada Air Lines Annual Report.

Year	Revenue Passenger Traffic ¹		Revenue Commodity Traffic ²		Mail Traffic
	No.	passenger-miles	lb.	ton-miles	ton-miles
1950.....	790,808	379,605,810	9,518,009	3,585,775	3,644,752
1951.....	930,691	450,840,623	10,826,333	3,861,583	3,969,371
1952.....	1,132,518	653,961,415	19,757,969	7,042,427	4,843,052
1953.....	1,307,810	759,319,800	22,996,531	7,947,113	5,373,841
1954.....	1,438,349	852,475,532	24,044,347	10,192,705	6,942,299
1955.....	1,682,195	989,392,395	30,889,383	12,175,433	7,704,144
1956.....	2,072,912	1,191,784,000	35,789,457	14,476,000	8,613,000
1957.....	2,392,713	1,885,777,000	23,987,486	15,478,000	9,855,000
1958.....	2,785,523	1,625,689,000	33,018,703	15,395,000	10,386,000
1959.....	3,209,197	1,828,902,000	37,997,398	17,753,000	10,905,000

¹ Includes non-scheduled service.² Includes excess baggage and express.**2.—Operating Revenue and Expenditure of Trans-Canada Air Lines, 1950-59**

SOURCE: Trans-Canada Air Lines Annual Report.

Year	Passenger	Freight ¹	Mail	Operating Revenue ²	Operating Expenditure	Operating Surplus
	\$	\$	\$	\$	\$	\$
1950.....	24,183,501	1,667,827	5,400,000	31,810,684	31,318,613	+ 492,071
1951.....	28,666,505	1,913,703	5,741,000	48,010,301	43,336,120	+4,674,181
1952.....	42,022,616	3,730,521	7,698,641	55,057,708	52,744,741	+2,312,967
1953.....	48,242,942	4,111,456	7,786,119	62,236,564	61,433,700	+ 802,864
1954.....	53,123,868	4,705,513	8,371,344	68,764,252	67,731,512	+1,032,740
1955.....	61,105,243	6,015,910	8,297,605	77,428,254	76,770,922	+ 657,332
1956.....	74,478,516	6,769,395	8,869,934	91,306,046	89,197,115	+2,108,931
1957.....	86,523,981	6,392,156	9,662,585	104,995,707	96,680,353	+8,315,354
1958.....	101,553,253	7,513,511	9,893,622	120,554,769	108,129,734	+12,425,035
1959.....	114,338,529	8,306,727	9,986,475	134,678,748	120,120,189	+14,558,559

¹ Express and excess baggage.² Includes other revenue.

Canadian Pacific Air Lines, Limited.—Canadian Pacific Air Lines operates a 44,700-mile route pattern linking five continents as well as major cities in Canada. This pattern comprises 7,500 domestic route miles (including 2,450 miles on the Canadian mainline service inaugurated on May 4, 1959). In 1959, CPA flew 303,384 revenue passengers a total of 457,704,874 revenue passenger-miles. Revenue cargo amounted to 5,466,965 ton-miles and mail to 2,694,003 lb. CPA overseas routes, 37,200 miles in extent, operate from Vancouver to Australia, New Zealand, Honolulu and Fiji on the South Pacific service; to Japan and Hong Kong via the Great Circle Route through the Aleutian Islands of the North Pacific; from Vancouver to Amsterdam via Edmonton, across the Arctic; and across the Atlantic from Montreal to Portugal, Spain and Italy. A South American network serves Mexico City, Lima, Santiago and Buenos Aires. Two services link Mexico City with both Toronto and Vancouver. In Canada, CPA operates a mainline transcontinental service linking Vancouver, Winnipeg, Toronto and Montreal and also north-south routes in Western Canada.

At the end of 1959, CPA's fleet consisted of 32 aircraft. These will be augmented by four 159-passenger Douglas Super DC-8 jet airliners scheduled for delivery in 1961. The order for these six-million-dollar aircraft, with options for five more, was announced in October 1959.

Independent Air Lines.—In addition to the two major Canadian air carriers—Trans-Canada Air Lines and Canadian Pacific Air Lines, Limited—there are four domestic air carriers licensed to operate scheduled commercial air services in Canada, namely, Maritime Central Airways Limited, Charlottetown, P.E.I.; Pacific Western Airlines Limited, Vancouver, B.C.; Quebecair Inc., Rimouski, Que.; and TransAir Limited, Winnipeg, Man.

Licensed domestic air carriers operating in Canada as at Mar. 31, 1959 held valid operating certificates covering 43 scheduled, 119 flying training, and 779 other non-scheduled and specialty services. These non-scheduled services, in addition to providing effective access to sections of Canada that are inaccessible by other means of transportation, act as feeder lines to the scheduled airlines. They also include such specialty services as recreational flying, aerial photography and surveying, aerial pest control, aerial advertising and aerial patrol.

Commonwealth and Foreign Scheduled Commercial Air Services.—At the end of December 1959 there were 17 Commonwealth and foreign air carriers holding valid Canadian operating certificates and licences covering international scheduled commercial air services operating into Canada, as follows:—

Air France (Compagnie Nationale Air France) operates between Paris and other points in Metropolitan France; Montreal, Que., Canada; Chicago, Ill., U.S.A., and points beyond.

American Airlines, Inc. operates between Toronto, Ont., Canada, and New York, N.Y./Newark, N.J., via Buffalo, N.Y., U.S.A.

British Overseas Airways Corp. operates between London, England, Prestwick, Scotland, Shannon, Ireland, Gander, Nfld., and Montreal, Que., Canada; and between London, England, Montreal, Que., Canada, and Jamaica in the West Indies.

Eagle Airways (Bermuda) Ltd. operates between Montreal, Que., and Bermuda.

Eastern Air Lines, Inc. operates between the terminals Ottawa, Ont., Canada, and Montreal, Que., Canada, and New York, N.Y., U.S.A., direct or via Burlington, Vt., U.S.A.; and between the terminals Ottawa, Ont., and Montreal, Que., Canada, and Washington, D.C., U.S.A., direct or via Massena/Syracuse, N.Y., U.S.A.

KLM Royal Dutch Airlines operates between Amsterdam, the Netherlands, Gander, Nfld., Canada, and Montreal, Que., Canada; and between Amsterdam, the Netherlands, Gander, Nfld., Canada, and New York, N.Y., U.S.A.

Lufthansa German Airlines operates between Hamburg, Germany, and other points abroad; Montreal, Que., Canada; and Chicago, Ill., U.S.A.

Northeast Airlines, Inc. operates between Montreal, Que., Canada, and Boston, Mass., U.S.A., via Burlington, Vt., Montpelier-Barre, Vt., White River Junction, Vt. (Lebanon Airport, N.H.), and Concord, N.H., U.S.A.

Northwest Airlines, Inc. operates between Winnipeg, Man., Canada, and Fargo, N.D., U.S.A.; and between Minneapolis/St. Paul, Minn., U.S.A., Edmonton, Alta., Canada, Anchorage, Alaska, and beyond.

Pan American World Airways Inc. operates between Seattle, Wash., and Fairbanks, Alaska, U.S.A., with points of call at Juneau and Annette Island, Alaska, and Whitehorse, Y.T., Canada; and between points in the United States, Gander, Nfld., Canada, and Europe.

Qantas Empire Airways Ltd. operates between Sydney, Australia, San Francisco, Cal., U.S.A., and Vancouver, B.C., Canada.

Sabena Belgian World Airlines operates between Brussels, Belgium, via Shannon, Ireland, and Montreal, Que., Canada.

Scandinavian Airlines System operates between Stockholm, Sweden, Oslo, Norway, Copenhagen, Denmark, Prestwick, Scotland, Montreal, Que., Canada, and New York, N.Y., U.S.A.

Seaboard and Western Airlines, Inc. operates between points in the United States, Gander, Nfld., Canada, and beyond.

TWA (Trans-World Airlines, Inc.) operates between points in the United States, Gander, Nfld., Canada, and points abroad.

United Air Lines, Inc. operates between Vancouver, B.C., Canada, and Seattle, Wash., U.S.A., via Bellingham, Wash., U.S.A.

Western Air Lines, Inc. operates between Great Falls, Mont., U.S.A., Calgary, Alta., and Edmonton, Alta.

Section 3.—Civil Aviation Statistics

Ground Facilities.*—Aircraft landing areas in Canada are classified in Table 3 by administrative agency, as licensed or unlicensed land facilities or seaplane bases, and military air fields. The unlicensed aerodromes and seaplane bases shown are kept in varying degrees of readiness but lack one or more of the facilities usually found in licensed airports, such as lights, customs offices, passenger accommodation, ground/air communication, etc. Associated with these ground facilities is a network of radio aids to navigation designed to facilitate en route navigation and safe landings under low visibility conditions.

The Department of Transport operates 93 low frequency radio ranges, 20 VHF omni-directional ranges (18 under construction), 69 non-directional radio beacons and 30 instrument landing systems. These facilities are calibrated and flight-checked by Civil Aviation Inspectors on a regular schedule. Eighteen additional VHF omni-directional ranges are under construction.

3.—Aircraft Landing Areas classified by Type of Facility and Operator, by Province, as at February 1960

NOTE.—This information is based on the latest *Airport and Aerodrome Directory* published by the Department of Transport. Further details may be found in that publication and in the *Canada Air Pilot*.

Type of Facility and Operator	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	N.W.T.	Yukon	Canada
Licensed Airports (Land)...	1	2	3	5	41	65	12	24	30	38	8	8	237
Department of Transport...	1	1	2	2	9	17	3	4	6	18	8	5	76
Municipality.....	—	—	1	1	9	20	6	11	10	16	—	—	74
Private.....	—	1	—	2	23	28	3	9	14	4	—	3	87
Unlicensed Aerodromes.....	9	1	5	3	51	37	34	129	32	79	9	11	400
Department of Transport...	1	—	1	—	2	17	3	2	1	6	2	—	35
Municipality.....	—	—	1	—	12	2	—	22	4	12	—	—	53
Private.....	5	1	3	3	32	17	31	103	27	22	6	5	255
Abandoned or unknown.....	3	—	—	—	5	1	—	2	—	39	1	6	57
Licensed Seaplane Bases.....	3	—	3	—	43	87	25	10	5	31	15	2	224
Department of Transport...	—	—	—	—	—	—	—	—	1	2	—	—	3
Municipality.....	—	—	—	—	—	1	—	1	1	6	—	—	9
Private.....	3	—	3	—	43	86	25	9	3	23	15	2	212
Unlicensed Seaplane Bases.....	20	1	8	4	41	35	23	17	11	60	33	8	261
Department of Transport...	—	—	—	—	—	—	—	—	—	7	1	—	8
Municipality.....	—	—	—	—	—	—	1	1	—	—	—	—	3
Private.....	8	—	1	—	20	24	12	5	8	17	15	2	112
Abandoned or unknown.....	12	1	7	4	21	11	10	11	8	35	17	6	138
Military Airfields.....	7	1	4	2	5	19	8	2	11	5	26	6	96
RCAF.....	3	1	2	2	5	18	7	2	10	1	25	2	78
Army.....	—	—	—	—	—	1	—	—	1	3	—	4	9
RCN.....	—	—	2	—	—	—	—	—	—	—	—	—	2
U.S. Navy.....	2	—	—	—	—	—	—	—	—	1	1	—	4
U.S. Air Force.....	2	—	—	—	—	—	1	—	—	—	—	—	3
Totals, Land Bases.....	10	3	8	8	92	102	46	153	62	117	17	19	637
Totals, Seaplane Bases.....	23	1	11	4	84	122	48	27	16	91	48	10	485
Totals, Military Airfields..	7	1	4	2	5	19	8	2	11	5	26	6	96
Grand Totals.....	40	5	23	14	181	243	102	182	89	213	91	35	1,218

Air Traffic Control.—The primary functions of the Air Traffic Control Division of the Department of Transport are to expedite and maintain an orderly flow of air traffic and to prevent collision between aircraft operating within controlled air space, and between aircraft and obstructions on the movement area of controlled airports. This is accom-

* Compiled from information provided by the Civil Aviation Branch, Air Services Division, Department of Transport, Ottawa.

plished through airport control, approach control and area control services, together with flight information, alerting for search and rescue, customs notification and aircraft identification. These services are described below.

Airport Control is designed particularly to provide air traffic control service in the vicinity of major civil airports where the volume and type of aircraft operations, weather conditions and other factors indicate its need in the interests of safety. The service includes the control of pedestrians and vehicles on the manoeuvring area of the airport. Control is effected by means of direct radiotelephone communication or visual signals to aircraft and surface vehicles on and in the vicinity of controlled airports. The control towers are located at Whitehorse, Y.T.; Victoria, Port Hardy and Vancouver, B.C.; Lethbridge, Calgary and Edmonton, Alta.; Saskatoon and Regina, Sask.; Winnipeg, Man.; the Lakehead, Windsor, London, Toronto, Toronto Island, Ottawa and North Bay, Ont.; Montreal, Cartierville, Quebec, Val d'Or, Baie Comeau and Sept Îles, Que.; Moncton and Saint John, N.B.; Sydney, N.S.; Gander, Nfld.; and Frobisher, N.W.T. Most of these control towers are in continuous operation but a few provide 16-hour daily service only.

Approach Control service consists of the provision of standard IFR separation to aircraft operating in accordance with Instrument Flight Rules within the local approach control area, which is generally within a 30-mile to 40-mile radius of the airport. Such service is provided by approach control units at Vancouver, B.C.; Edmonton and Calgary, Alta.; Saskatoon and Regina, Sask.; Winnipeg, Man.; the Lakehead, Toronto, Ottawa and North Bay, Ont.; Quebec and Montreal, Que.; Gander, Nfld.; and Frobisher, N.W.T.

Area Control is designed particularly to provide air traffic control service to aircraft operating within controlled airspace during weather conditions which prevent a pilot from seeing other aircraft or obstructions and necessitate his reliance on instruments to conduct the flight. Control centres are located at Vancouver, B.C.; Edmonton, Alta.; Winnipeg, Man.; Toronto, Ont.; Montreal, Que.; Moncton, N.B.; and Goose Bay and Gander, Nfld. Each centre is connected with the control towers, radio range stations and operations offices within its area by means of an extensive system of local and long-line interphone or radio circuits, and through the radio communication facilities available at these offices to all aircraft requiring area control service. Each area control centre is similarly connected with the adjacent centres, including centres in the United States, for the purpose of co-ordinating the control of aircraft operating through more than one control area. This communications system permits each centre to maintain a continuous detailed record of the movements of all aircraft operating in accordance with the Instrument Flight Rules, and a general record of the movements of all aircraft operating in accordance with the Visual Flight Rules within its control area. In addition to providing area control service to aircraft operating within the controlled airspace over Newfoundland, the Goose Bay and Gander control centres provide this service within the airspace over approximately one-half of the North Atlantic Ocean. The Vancouver area control centre also provides control service over the Pacific Ocean within the Vancouver Oceanic Control Area. Area control service is provided for approximately 16,000 miles of airways and control channels.

Flight Information provides advice and information useful for the safe and efficient conduct of flight, including weather reports and forecasts, field condition reports, data concerning aids to navigation, traffic information, refuelling and transportation facilities and other related data of assistance to the pilot in planning or conducting a flight. Such service is provided by all air traffic control units but particularly by the eight area control centres.

Alerting for Search and Rescue is designed to ensure that the appropriate organizations are notified of aircraft in need of search and rescue aid and otherwise to assist such organizations, as required. Area control centres are responsible for notifying these organizations promptly of non-arrival at destination of any aircraft for which a flight plan or flight notification has been received. This requires the maintenance and constant supervision of a continuous record of active flights to ensure that non-arrival of any aircraft is detected immediately. The service is available to any pilot who files either a flight plan or a flight notification with any communications agency of the Air Services of the Department or directly with one of the area control centres or control towers.

Customs Notification Service facilitates the routine notification of the appropriate customs agency by pilots who plan to cross the Canada-United States boundary. The Air Traffic Control communications system and units concerned therewith forward pilot requests to notify the customs officer at the airport of destination.

Aircraft Movement Information Service is provided by area control centres to assist the Department of National Defence in establishing the identification of all aircraft operating within specified areas.

The number of controlled operations in Canada during 1959 was 3,055,533.

Operation Statistics.—The statistics given in Table 4 show the volume of passenger, freight and mail traffic.

4.—Summary Statistics of Civil Aviation, 1955-58

NOTE.—Figures include operations of Canadian international carriers and Canadian operations of foreign carriers.

Item		1955	1956	1957	1958
Aircraft-Miles Flown—					
Revenue.....	No.	83,805,304	101,723,710	104,699,140	99,858,279
Non-revenue.....	"	..	..	..	..
Totals.....	No.	83,805,304	101,723,710	104,699,140	99,858,279
Passengers Carried—					
Revenue.....	No.	3,249,099	3,864,818	4,319,920	4,555,251
Non-revenue.....	"	54,076	58,721	35,554	23,317
Totals.....	No.	3,303,175	3,923,539	4,355,474	4,578,568
Passenger-Miles—					
Revenue.....	No.	1,223,825,448	1,547,279,882	1,835,183,870	2,142,276,186
Non-revenue.....	"	57,477,989	61,416,920	71,030,597	86,663,863
Totals.....	No.	1,281,303,437	1,608,696,802	1,906,214,467	2,228,940,049
Freight Carried—					
Revenue.....	lb.	233,561,830	319,260,401	264,812,177	200,388,312
Non-revenue.....	"	7,121,832	7,639,517	7,079,240	6,462,608
Totals.....	lb.	240,683,662	326,899,918	271,891,417	206,850,920
Freight Ton-Miles—					
Revenue.....	No.	18,084,169	22,065,286	24,267,406	26,447,626
Non-revenue.....	"	3,477,194	3,039,907	2,998,061	3,433,553
Totals.....	No.	21,561,363	25,105,193	27,265,467	29,881,179
Mail carried.....	lb.	26,616,505	27,914,288	31,413,504	33,628,013
Mail ton-miles.....	No.	9,048,610	10,238,458	12,021,927	13,037,645
Hours Flown by Aircraft—					
Transportation revenue.....	No.	530,924	646,902	628,785	573,750
Transportation non-revenue.....	"	31,306	37,567	40,760	35,458
Patrols, surveys, etc.....	"	74,989	87,920	113,271	135,587
Totals.....	No.	637,219	772,389	782,816	744,795
Gasoline consumption.....	gal.	77,938,918	102,836,140	112,769,672	128,051,496
Lubricating oil consumption.....	"	1,006,154	1,212,361	1,220,680	1,169,636
Licensed civil airports (all types).....	No.	495	519	550	452
Year Ended Mar. 31—					
		1955	1956	1957	1958
Licensed Civil Aircraft (all types).....	No.	3,148	3,217	3,646	4,509
Licensed Civil Air Personnel—					
Commercial pilots.....	No.	1,754	2,145	2,411	2,548
Senior commercial.....	"	312	380	399	423
Airline transport.....	"	717	831	968	1,069
Glider pilots.....	"	201	246	237	304
Private pilots.....	"	5,559	6,580	7,832	9,043
Air navigators.....	"	56	77	101	108
Air traffic controllers.....	"	270	416	565	631
Air engineers.....	"	20	33	43	49
Aircraft maintenance engineers.....	"	1,544	1,747	1,916	2,043

¹ Includes employees other than crews.

Table 5 shows civil aviation figures for 1958 by type of service. A definition of scheduled and non-scheduled carriers is given on p. 871. Statistics for international carriers include traffic over Canadian territory for both Canadian and foreign operators; a small amount of traffic across Canadian territory and between foreign stations is also included.

5.—Summary Statistics of Civil Aviation, by Type of Service, 1958

Item		Canadian Carriers			Foreign Inter-national	Total
		International ¹	Scheduled	Non-scheduled and Other		
Aircraft-Miles Flown — revenue transportation.....	No.	23,345,636	49,039,637	23,425,293	4,047,713	99,858,279
Passengers Carried.....	No.	954,955	2,665,451	416,223	541,939	4,578,568
Revenue.....	"	951,430	2,657,304	414,203	532,314	4,555,251
Non-revenue.....	"	3,525	8,147	2,020	9,625	23,317
Passenger-Miles ²	No.	846,723,732	1,261,799,172	12,212,964	108,204,181	2,228,940,049
Revenue.....	"	812,106,137	1,212,440,441	11,616,968	106,112,640	2,142,276,186
Non-revenue.....	"	34,617,595	49,358,731	595,996	2,091,541	86,663,863
Freight Carried ³	lb.	12,444,806	56,978,396	108,732,744	9,169,922	187,325,868
Revenue.....	"	11,617,993	52,800,667	107,823,324	8,621,276	180,863,260
Non-revenue.....	"	826,813	4,177,729	909,420	548,646	6,462,608
Freight Ton-Miles ³	No.	8,808,706	12,331,944	2,130,217	1,188,503	24,459,370
Revenue.....	"	7,549,940	10,408,788	2,015,299	1,051,790	21,025,817
Non-revenue.....	"	1,258,766	1,923,156	114,918	136,713	3,433,553
Mail carried.....	lb.	3,519,573	26,344,955	1,523,313	2,240,172	33,628,013
Mail ton-miles.....	No.	3,039,213	9,060,622	125,826	811,984	13,037,645
Hours Flown by Aircraft.....	No.	96,772	274,760	356,834	16,429	744,795
Transportation revenue.....	"	93,511	251,667	212,174	16,398	573,750
Transportation non-revenue.....	"	3,261	14,238	17,928	31	35,458
Patrols, surveys, etc.....	"	—	8,855	126,732	—	135,587
Gasoline consumption.....	gal.	24,078,670	72,148,466	9,891,384	21,932,976	128,051,496
Lubricating oil consumption.....	"	297,089	454,937	145,264	272,356	1,169,636

¹ Includes trans-border services.

² Exclusive of charter service, figures for which are not available.

³ Includes freight, excess baggage and express.

6.—Capital Investment of the Department of Transport in Air Services as at Mar. 31, 1956-58

NOTE.—Compiled from Department of Transport records.

Item	1956	1957	1958	Total as at Mar. 31, 1958
Civil Aviation Branch—	\$	\$	\$	\$
Airways and Airports—				
Capital appropriations.....	20,380,084	24,575,153	34,988,738	308,483,806
Transferred from other departments.....	187,736	2,337,508	310,179	
Transferred to other departments.....	—	661,781	—	
Property transferred to Crown Assets Disposal Corporation.....	Cr. 4,589,963	Cr. 4,035,133	Cr. 805,401	
Property retired through obsolescence, loss or abandonment.....	Cr. 830,678	Cr. 20,532,817	Cr. 6,770,503	
Telecommunications Branch—				
Radio Aids to Air and Marine Navigation—				
Capital appropriations.....	3,203,598	5,890,498	9,234,880	45,323,766
Property transferred to Crown Assets Disposal Corporation.....	Cr. 6,600	—	—	
Property retired through obsolescence, loss or abandonment.....	—	Cr. 374,863	Cr. 206,550	

6.—Capital Investment of the Department of Transport in Air Services as at Mar. 31, 1956-58
—concluded

Item	1956	1957	1958	Total as at Mar. 31, 1958
	\$	\$	\$	\$
Telecommunications Branch—concluded				
Radio Act and Regulations—				
Capital appropriations.....	196,257	424,727	633,954	2,075,151
Property retired through obsolescence, loss or abandonment.....	—	Cr. 98,897	—	
Northwest Communication System—				
Capital appropriations.....	485,414	891,966	1,406,965	17,881,397
Property transferred to Crown Assets Disposal Corporation.....	Cr. 2,031	Cr. 68,771	Cr. 38,233	
Property retired through obsolescence, loss or abandonment.....	Cr. 1,138	Cr. 139,613	Cr. 120,988	
Meteorological Branch—				
Capital appropriations.....	1,057,686	846,751	550,965	7,328,484
Transferred from other government departments..	246,509	249,985	57,553	
Property retired through obsolescence, loss or abandonment.....	—	—	Cr. 244,233	
Totals.....	20,326,964	9,306,913	38,997,326	381,092,604

7.—Expenditure and Revenue of the Department of Transport in connection with Air Services, Years Ended Mar. 31, 1956-58

NOTE.—Compiled from Department of Transport records.

Item	1956	1957	1958
	\$	\$	\$
Expenditure			
Air Transport Board.....	247,552	267,282	291,236
Air Services Administration.....	670,123	821,362	973,844
Civil Aviation Branch.....	13,515,272	16,289,504	19,554,492
Control of Civil Aviation.....	1,035,412	1,148,866	1,412,433
Construction Services—Administration.....	793,273	1,095,337	1,426,290
Grants to aeroplane clubs.....	301,750	359,950	502,200
Airways and Airports, Operation and Maintenance—			
Ordinary.....	9,081,301	9,933,248	11,495,378
Contributions to assist municipalities.....	80,097	117,947	38,672
Contributions to State of Michigan.....	19,780	23,410	24,200
Contributions to International Civil Aviation Organization re			
Iceland Government air aids to navigation.....	29,138	35,544	37,915
Contributions to Denmark in joint support of North Atlantic			
Air Navigation facilities in the Faroes and Greenland.....	48,865	37,258	43,496
Contributions to South Pacific Air Transport Council.....	122,500	122,500	122,500
Contributions towards airport development on cost-sharing basis.	80,510	500,507	428,145
Airways and airports traffic control.....	1,922,646	2,914,937	4,023,263
Telecommunications Branch.....	10,448,370	12,304,381	13,793,581
Administration of Radio Act and Regulations.....	1,555,992	1,683,185	2,061,772
Radio aids to air and marine navigation.....	8,148,460	9,938,775	11,185,321
Telegraph and Telephone Services—			
Administration, operation and maintenance.....	444,871	399,620	232,999
Construction and improvements.....	299,047	282,801	313,489
Meteorological Branch, Operations and Maintenance.....	7,326,209	8,381,456	10,153,495
Totals, Expenditure.....	32,207,526	38,063,985	44,706,648

**7.—Expenditure and Revenue of the Department of Transport in connection with
Air Services, Years Ended Mar. 31, 1956-58—continued**

Item	1956	1957	1958
	\$	\$	\$
Revenue and Receipts			
Air Services Administration	1	45	3,443
Civil Aviation Branch	6,343,972	6,784,506	7,020,406
Private air pilots' certificates.....	17,575	22,032	23,817
Aircraft licences.....	321	198	401
Aircraft registration certificates.....	7,060	7,690	7,985
Airworthiness certificates.....	2,190	3,000	3,015
Aircraft earnings.....	—	—	6,748
Fines, Aeronautics Act and Regulations.....	4,668	1,816	5,362
Land rental.....	66,882	91,023	104,347
Living quarters.....	321,062	292,627	307,296
Hangar rental.....	451,396	376,705	373,339
Office, shop and garage space.....	490,097	475,500	512,362
Equipment rental.....	13,172	5,996	19,859
Miscellaneous rentals.....	59,975	70,144	82,594
Concessions—			
Gasoline and oil.....	707,312	837,750	844,430
Taxi.....	56,781	58,135	65,663
Restaurants and snack bars.....	89,692	64,746	74,142
Telephone.....	11,999	12,692	14,900
Car parking area.....	43,378	58,977	151,073
Car rental.....	16,199	26,247	41,832
Other.....	57,907	77,937	73,378
Aircraft landing fees.....	2,841,371	3,312,241	3,422,100
Aircraft parking and handling.....	60,709	67,332	61,821
Power service.....	83,398	100,208	102,416
Mess receipts.....	27,880	24,063	48,347
Sales—			
Water.....	17,707	35,292	46,772
Land and buildings.....	165	2,556	52,962
Miscellaneous.....	5,879	4,161	8,495
Telephone service.....	18,291	14,429	23,544
Observation roof turnstiles.....	25,243	28,868	38,275
Gander Airport—			
Mess hall accommodation.....	22,544	14,006	49
Airlines hotel accommodation.....	39,775	20,186	—
Coal sales.....	21,953	27,386	19,786
Mess hall board.....	23,878	11,861	146
Airlines hotel dining room.....	56,799	26,395	15
Airlines hotel bar.....	52,974	26,552	—
Recoverable services.....	22,896	21,682	28,803
Heating.....	102,593	176,577	96,245
Electricity.....	150,300	164,237	184,500
Sanitary fees.....	3,006	2,055	2,115
Bus operation.....	8,124	8,996	5,832
Assessment collections.....	465	386	225
Net profit commercial caterers.....	97,682	65,356	—
ATC Main Network Interphone Service "F".....	—	9,049	10,528
Miscellaneous revenue.....	107,175	89,336	81,868
Refunds, previous year's expenditure.....	45,499	48,081	73,019
Telecommunications Branch	1,940,107	2,727,340	2,764,061
Air-ground radio services.....	374,573	617,408	522,817
Radio operators' examination fees.....	1,703	3,071	3,680
Radio Station Licences—			
Aircraft station.....	16,825	20,204	28,808
Amateur experimental station.....	16,925	18,441	26,816
Commercial receiving station.....	624	199	331
Experimental station.....	1,280	1,517	1,751
Limited coast station.....	950	950	1,000
Municipal police private commercial station.....	413	463	705
Private commercial station.....	106,202	135,188	213,862
Public commercial station.....	18,915	23,117	42,225
Ship station.....	42,033	43,727	59,100
Commercial broadcasting receiving station.....	1,289	3,718	5,462
Technical and training school station.....	32	15	85
Sales—			
Transport publications.....	2,816	2,850	2,994
Power service.....	11,694	3,622	2,166
Land and buildings.....	175	34,300	8,000
Miscellaneous.....	91	248	144
Fines—Radio Act and Regulations.....	196	84	26
Message tolls.....	268,175	410,555	282,459

**7.—Expenditure and Revenue of the Department of Transport in connection with
Air Services, Years Ended Mar. 31, 1956-58—concluded**

Item	1956	1957	1958
	\$	\$	\$
Telecommunications Branch—concluded			
Rentals—			
Living quarters.....	156,143	180,119	235,806
Space control lines and power.....	26,138	27,193	31,369
Miscellaneous.....	5,365	7,833	5,227
Government telegraph and telephone tolls.....	203,439	154,556	66,272
Sale of British Columbia facilities.....	—	162,065	18,900
Sale of Mount Hayes-Sandspit System.....	35,000	—	—
Mess receipts.....	6,629	1,098	912
Miscellaneous revenue.....	6,904	2,032	10,855
Northwest Communication System.....	592,202	786,448	869,191
Refunds, previous year's expenditure.....	43,376	86,319	323,098
Meteorological Branch.....	58,773	94,380	120,266
Rentals—			
Living quarters.....	26,549	38,199	53,395
Miscellaneous.....	4,127	3,311	5,491
Sale of transport publications.....	2,063	2,646	2,974
Radio commercial message tolls—DOT operated stations.....	3,042	13,274	1,158
Communication facilities—inter-office.....	2,560	3,898	3,472
Power service.....	474	465	1,913
Sundries.....	12,079	15,431	6,031
Refunds, previous year's expenditure.....	7,879	17,156	45,832
Totals, Revenue and Receipts.....	8,342,853	9,606,271	9,908,176

No statistics are available regarding total expenditure on flying operations by the federal and provincial governments or by private individuals, but capital expenditure by commercial air carriers for property as reported for the end of 1957 and 1958 is shown in Table 8.

**8.—Cost of Property, Revenue and Expenditure for Scheduled and Other
Commercial Air Carriers, 1957 and 1958**

Item	1957			1958		
	Scheduled ¹	Other	Total	Scheduled ¹	Other	Total
	\$	\$	\$	\$	\$	\$
Cost of Property.....	88,289,453	14,839,950	103,129,403	126,953,406	14,964,918	141,918,324
Aircraft.....	56,355,765	8,738,247	65,094,012	84,053,955	8,472,465	92,526,420
Aircraft engines.....	12,522,964	1,749,353	14,272,317	19,613,121	1,406,953	21,020,074
Buildings and improvements.....	9,878,034	2,790,418	12,668,452	10,651,886	3,205,827	13,857,713
Miscellaneous.....	9,532,690	1,561,932	11,094,622	12,634,444	1,879,673	14,514,117
Revenue and Expenditure—						
Revenue.....	151,175,307	38,867,753	190,043,065	164,855,749	36,858,187	201,713,936
Expenditure.....	151,621,408	37,792,381	189,413,789	164,819,252	35,458,973	200,278,225

¹ Includes Canadian trans-border, transatlantic and transpacific services.

Employees and Salaries and Wages.—The numbers of civil air personnel licensed in recent years are shown in Table 4, p. 876. However, the figures in Table 9 include pilots and engineers in the employ of the Federal Government and of private individuals as well as those not employed at all in the ordinary sense.

9.—Employees and Salaries and Wages in Civil Aviation, 1957 and 1958

Year and Class of Employee	Scheduled		Non-scheduled		Totals	
	Em- ployees	Salaries and Wages	Em- ployees	Salaries and Wages	Em- ployees	Salaries and Wages
1957	No.	\$	No.	\$	No.	\$
General officers.....	857	6,546,703	137	1,038,021	994	7,584,724
Clerks.....	1,783	5,926,744	261	967,190	2,044	6,893,934
Pilots.....	927	9,260,522	688	4,423,416	1,615	13,683,938
Co-pilots.....	195	1,220,984	90	430,293	285	1,651,277
Despatchers.....	148	826,673	50	181,599	198	1,008,272
Communication operators.....	816	2,786,282	51	176,932	867	2,963,214
Stewards or other attendants.....	681	2,531,628	11	38,766	692	2,570,394
Air engineers.....	669	3,927,710	337	1,707,046	996	5,634,756
Mechanics.....	2,515	11,884,951	525	1,867,218	3,040	13,752,169
Airport employees.....	2,241	8,522,160	141	333,316	2,382	8,855,476
Stores employees.....	360	1,313,886	78	243,958	438	1,557,844
Other employees.....	2,053	8,148,139	410	1,009,419	2,463	9,157,558
Totals, 1957¹.....	13,235	62,896,382	2,779	12,417,174	16,014	75,313,556
1958						
General officers.....	926	7,285,884	148	1,180,004	1,074	8,465,888
Clerks.....	1,801	6,275,958	230	892,594	2,031	7,168,552
Pilots.....	960	10,126,764	625	3,999,870	1,585	14,126,634
Co-pilots.....	157	1,167,680	50	359,210	207	1,526,890
Despatchers.....	139	784,636	44	200,358	183	984,994
Communication operators.....	800	2,969,762	32	119,301	832	3,089,063
Stewards or other attendants.....	806	3,121,070	13	43,456	819	3,164,526
Air engineers.....	691	4,197,989	278	1,558,145	969	5,756,134
Mechanics.....	2,581	12,627,066	439	1,708,395	3,020	14,335,461
Airport employees.....	2,241	9,284,138	107	280,496	2,348	9,564,634
Stores employees.....	355	1,362,033	76	222,861	431	1,584,894
Other employees.....	2,123	9,284,135	368	1,183,340	2,491	10,467,475
Tota's, 1958.....	13,580	68,487,115	2,410	11,748,030	15,990	80,235,145

¹ Excludes employees of foreign carriers domiciled in Canada.

PART VI.—OIL AND GAS PIPELINES

A special article covering the history and development of pipeline construction in Canada appears in the 1954 Year Book at pp. 861-869. Additional information has been carried in each succeeding edition and the following Section brings pipeline development up to the end of 1959.

Section 1.—Pipeline Developments*

Oil Pipelines.—The growth of the oil pipeline transportation industry parallels the development of petroleum resources in Canada. Although various small diameter pipelines were built as early as 1875 in Ontario and 1925 in Alberta, almost all of the pipeline systems now in operation were constructed following the Leduc oil discovery in 1947 which ushered in the modern era of the Canadian oil and gas industry.

Except for the completion of one new pipeline from the Swan Hills area to Edmonton, built by Federated Pipe Lines Limited, there was very little oil pipeline construction in 1959. Most oil pipeline construction took place in Alberta and consisted of extensions to gathering systems. These extensions were made up largely of 40 miles of line from 12-inch to two-inch in the Swan Hills area and about 40 miles of small diameter line in the Pembina field. In addition to these, a six-inch condensate line was constructed from the gas-processing plant at Windfall to the Trans Mountain pipeline at Bickerdike pump station west of Edson. In Saskatchewan, Producers Pipeline Limited—Westspur Pipe Line

* Prepared under the direction of Dr. Marc Boyer, Deputy Minister of the Department of Mines and Technical Surveys, by R. A. Simpson, Mineral Resources Division.

added 80 miles of gathering line to its system in southeastern Saskatchewan. At the end of 1959 there were over 7,500* miles of oil pipeline in Canada. In addition there was a total of almost 1,400 miles of oil pipeline carrying Canadian crude exclusively within the United States.

There are two principal components of the oil transportation system: the trunk lines of Interprovincial Pipe Line Company and Trans Mountain Oil Pipe Line Company. Feeder lines which carry crude oil to the main terminals of these two systems fan out from Edmonton to fields as far as 125 miles away. In addition to Interprovincial's own line from the Redwater field, six pipeline companies including the new Federated line carry crude to the Edmonton terminals.

The Britam Oil Pipe Line Company operates a pipeline which originates in the Drumheller field about 140 miles south-southeast of Edmonton, and in turn takes crude from West Drumheller, Fenn-Big Valley, Stettler, Joffre, Malmo, New Norway, Duhamel and Battle fields. The Edmonton Pipe Line Company brings crude from the Camrose and Joarcan fields about 40 miles southeast of Edmonton. The Imperial Pipe Line Company system from the fields southwest of Edmonton is composed of three lines which transport crude oil from the Leduc-Woodbend, Acheson and Golden Spike fields. Pembina Pipe Line Limited carries crude from the Pembina field 70 miles west of Edmonton as well as from the Keystone field. Texaco Exploration Company operates a pipeline which takes crude oil from the Rangeland Pipe Line Company and Gibson Crude Oil Purchasing Company pipelines and from Westrose, Bonnie Glen, Wizard Lake and Glen Park fields. Rangeland serves the Sundre field, 125 miles south-southwest of Edmonton, as well as the Garrington, Innisfail, Gilby, Bentley and West Joffre fields. Gibson serves the Homeglen-Rimbey field. The Federated pipeline also serves the Edmonton terminals but is covered in some detail below.

Interprovincial Pipeline. -The Interprovincial system which, includes the wholly owned subsidiary Lakehead Pipe Line Company operating the portion of the line in the United States, is the longest oil pipeline in the world. It is 1,934 miles in extent stretching from the Redwater field 35 miles northwest of Edmonton to Port Credit near Toronto in Ontario. The system consists of two complete lines from Edmonton to Superior, Wisconsin, at the head of Lake Superior, a 30-inch line from Superior to Sarnia, Ont., and a 20-inch line from Sarnia to Port Credit. In addition to the lines bringing crude to Edmonton, one other pipeline in Alberta, two in Saskatchewan and two in Manitoba also deliver oil to the line. Deliveries are made to two pipelines in Saskatchewan, two in Manitoba and one in the State of Minnesota. Altogether, 20 refineries (13 in Canada and 7 in United States) are served either directly by Interprovincial or by connecting carriers. The capacities of the various sections of the line are as follows:—

Section	Barrels per Day Capacity
	No.
Edmonton, Alta., to Regina, Sask.	290,000
Regina, Sask., to Gretna, Man.	335,000
Gretna, Man., to Superior, Wisconsin.	346,000
Superior, Wisconsin, to Sarnia, Ont.	300,000
Sarnia, Ont., to Port Credit, Ont.	110,000

Trans Mountain Pipeline. -The Trans Mountain pipeline system is a 24-inch pipeline stretching from Edmonton to Vancouver. A lateral line transports crude oil across the border to refineries at Ferndale and Anacortes in the State of Washington. Two 50-mile loops were added earlier at bottlenecks to increase capacity, which in 1959 was 250,000 bbl.

* Mileage for 1960 will show the addition of 570 miles of pipeline in the Yukon Territory. These lines, running along the Alaska Highway between the Alaska boundary and Whitehorse and between Carcross and Watson Lake and originally forming part of the Canol system constructed by the United States during the Second World War to supply fuel for naval operations in the Pacific, were purchased by the Canadian Government from the United States on Mar. 31, 1960.

daily. In addition to taking deliveries of crude at Edmonton, it takes crude from the Peace River pipeline which serves the Sturgeon Lake, Sturgeon Lake South and Kaybob fields. Five refineries in British Columbia and three in the State of Washington are connected to the pipeline.

Federated Pipeline.—The Federated pipeline was largely completed in 1958 but first deliveries of crude oil to Edmonton were not made until late in January 1959. The main trunk line from the Swan Hills field is of 10½-inch pipe except for eight miles near Edmonton where 12½-inch pipe is needed. The line operates solely by gravity and can deliver up to 20,000 bbl. daily by this method. Pumps would raise the capacity to 78,000 bbl. daily. A lateral carries crude from the Virginia Hills, Judy Creek and Sarah Lake fields to the main line.

Pipeline Tariffs.—The cost of transporting oil by pipeline is considerably cheaper than by rail or truck. Some examples of costs follow.

<u>Route</u>	<u>Transmission Distance</u>	<u>Tariff</u>
	miles	cts. per bbl.
Edmonton, Alta., to—		
Regina, Sask.....	438	23½
Winnipeg, Man.....	848	45
Sarnia, Ont.....	1,743	64
Port Credit, Ont.....	1,899	72
Vancouver, B.C.....	718	40
Washington State, U.S.A.....	740	42

Gas Pipelines.—Construction of gas pipelines in Canada continued to dominate all pipeline construction in 1959. Even so, the construction program was below the record level of 1958 by about one-third. In contrast to 1958 when the majority of pipeline work was concentrated in Ontario on projects associated with the Trans-Canada pipeline, the major construction jobs were in the western provinces. Approximately 1,600 miles of all types of gas line (gathering, transmission and distribution) were laid in the west compared with 1,100 miles in the east, where the installations were essentially all distribution systems. The addition of this mileage brought the total of natural gas pipelines in Canada to over 28,400 miles. This total includes 2,671 miles of gathering line, 9,980 miles of main trunk line and 15,830 miles of distribution line.

As in the petroleum industry which has two main transmission lines from the sources of supply to markets in the east and in the west, there are two main gas trunk lines stretching in opposite directions. The gas supply of Westcoast Transmission Pipe Line Company is in the Peace River district of British Columbia and Alberta. This line serves markets in the lower mainland area of British Columbia and makes deliveries to a United States pipeline system at a point on the British Columbia-Washington border near Chilliwack. The Trans-Canada Pipe Line Company line carries natural gas from Alberta to distribution companies in Saskatchewan, Manitoba, Ontario and Quebec.

Westcoast Pipeline and Connecting Pipelines.—The Westcoast line was completed in 1957 and consists of 605 miles of 30-inch main trunk line and 206 miles of gathering line varying from 26 inches down to four inches in diameter. The line delivers to the Inland Natural Gas Company Limited, British Columbia Electric Company and to Pacific Northwest Pipeline Corporation in the United States. Inland serves the Cariboo region of British Columbia including the main towns of Kamloops, Vernon, Kelowna, Penticton, Trail and Nelson. British Columbia Electric serves the greater Vancouver area. Pacific Northwest takes gas for distribution in the northwestern United States.

Trans-Canada Pipeline and Connecting Pipelines.—The Trans-Canada pipeline is the longest pipeline in the world, consisting of a total of 2,290 miles of pipe stretching from the Alberta-Saskatchewan border to Montreal in Quebec. The line is 34 inches in diameter

from the receiving terminal to Winnipeg and 30 inches from Winnipeg to Toronto. The Toronto-Montreal portion is 20-inch pipe. The pipeline serves distribution companies in Saskatchewan, Manitoba, Ontario and Quebec.

Alberta Gas Trunk Line Company.—Extensions to the Alberta Gas Trunk system which delivers all of Trans-Canada's gas to it at Burstal, Sask., near the Alberta border constituted the largest single pipeline construction job in 1959. The construction was also the largest extension made by the company. A total of 122 miles of 30-inch pipe was constructed from the Princess field to Torrington where a 16-inch lateral was built to the Nevis field a distance of 46 miles, and a 33-mile 12 $\frac{3}{4}$ -inch lateral was built to the Carstairs field. Other laterals from the main 30-inch line included nine miles of 6 $\frac{5}{8}$ -inch pipe to the Wayne field, six miles of 6 $\frac{5}{8}$ -inch pipe to the Hussar field and seven miles of 6 $\frac{5}{8}$ -inch pipe to the Makepeace field. On the Provost main line near the Saskatchewan border, Alberta Gas trunk built six miles of 8 $\frac{5}{8}$ -inch pipe to connect the South Provost field to the 18-inch mainline.

Saskatchewan Power Corporation.—This Corporation constructed 550 miles of pipeline in 1959 of which 305 miles was mainline. A total of 80 miles of 10-inch pipe was built from the Success field to Rosetown, thus connecting the northern portion of the Corporation's system to the southern portion and the large gas reserves the company owns in the Hatton and Medicine Hat fields. The northern section was also extended to the town of Tisdale. The longest line constructed in the province in 1959 was the 113-mile, 12-inch section from Regina to Yorkton. The system was connected to a new source of supply when a line was built from the Nottingham gas conservation plant to the main line running from the Steelman conservation plant to Regina. In addition to the towns of Yorkton and Tisdale, 17 other communities in Saskatchewan received natural gas services.

Other Gas Pipelines.—In Manitoba almost all gas pipeline construction was for the Greater Winnipeg Gas Company. Approximately 350 miles of mains and extensions were completed.

In Ontario the transmission lines were completed prior to 1959. During 1959 the three large distribution firms in the province completed a total of 900 miles of pipeline, all of it for distribution purposes, although some was of larger diameter to connect towns up the valley of the Ottawa River as far as Renfrew. Union Gas Company which serves the southwest portion of the province added 250 miles of lines to its system. Consumers Gas Company which serves most of the remainder of southern Ontario completed 350 miles of pipeline. Northern Ontario Natural Gas Company which serves the northern part of the province along with Twin City Gas Company constructed 300 miles of line.

In Quebec province about 200 miles of distribution lines were completed in 1959, divided, about evenly, between the city of Hull and the Montreal area.

At the end of 1959 all of the major centres of population from Vancouver to Montreal had natural gas service.

Section 2.—Oil Pipeline Statistics*

There were 37 oil pipeline companies operating in Canada at the end of 1959, with a total mileage of 7,808 compared with 7,147 at the end of 1958. Pipeline deliveries shown in Table 1 were made to non-pipeline carriers, foreign pipelines, and terminals including refineries and distributing centres.

During 1959 operating revenues of all oil pipelines except Amurex Oil Development Company, Anglo American Exploration Company, Anglo Canadian Oils Limited, Green River Exploration Company, Mobil Oil of Canada Limited, and Sarnia Products Line totalled \$86,897,575 compared with \$76,621,901 in 1958.

* Statistics of oil pipelines are given in greater detail in the DBS monthly report *Oil Pipe Line Transport* (Catalogue No. 55-001). Additional information on the interprovincial movement of oil by pipeline will be found in Chapter XX, Part I, Section 5.

1.—Oil Delivered by Pipeline 1955-59

Destination	1955	1956	1957	1958	1959
	bbl.	bbl.	bbl.	bbl.	bbl.
British Columbia.....	19,309,150	21,809,740	22,300,264	20,597,276	22,585,326
U.S. Pacific Northwest (at Sumas, B.C.).....	11,408,992	19,211,435	27,329,940	8,968,639	13,271,836
West Coast offshore shipments.....	—	6,230,466	6,904,960	—	—
Alberta ¹	18,518,740	17,830,462	13,570,320	16,150,606	22,741,019
Saskatchewan.....	15,543,202	16,732,869	17,691,698	16,289,075	18,509,119
Manitoba.....	7,514,552	9,961,540	9,952,757	10,628,835	10,977,184
U.S. Midwest (at Gretna, Man.).....	5,246,832	16,867,189	20,643,820	20,781,689	20,433,937
Ontario—crude oil.....	46,460,834 ^r	52,939,883 ^r	52,953,090 ^r	61,957,229 ^r	78,241,614
Ontario—refinery products.....	37,894,021	43,022,682	44,189,759	43,256,943	45,693,356
Quebec.....	67,691,018	76,758,440	81,428,930	78,547,073	84,371,790
Totals, Net Deliveries.....	229,587,341^r	281,364,706^r	296,965,538^r	277,177,365^r	316,825,181

¹ Includes natural gasoline and other products.

Revenue and employee data shown in Table 2 are not complete; both revenue and employee figures have been omitted for three companies and employee figures for eight other companies, since pipeline operation forms only a part of the activities of these establishments and the data are not separable.

2.—Operating Statistics of Oil Pipelines, 1956-59

Item		1956	1957	1958	1959
Barrels Handled (gross daily average)—					
Gathering.....	No.	419,342	448,401	428,568	494,353
Trunk.....	"	1,014,353	1,140,146	1,098,341	1,228,194
Barrel miles (trunk lines).....	'000,000	110,992	114,572	98,522	114,154
Average miles per barrel (trunk lines).....	No.	299	273	245	255
Average employees.....	"	1,500	1,722	1,653	1,559
Salaries and wages.....	\$	7,929,889	9,541,372	9,321,821	9,351,295
Man-hours worked by wage-earners (including overtime).....	No.	834,493	962,302	855,225	853,241
Operating revenues.....	\$	78,316,555	87,719,710	76,621,901	86,897,575

CHAPTER XIX.—COMMUNICATIONS

CONSPECTUS

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NOTE.—The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Communications media in Canada have been shaped to meet the needs of the country. Great networks of telephone, telegraph and radio services, inextricably bound together, provide adequate and efficient service which, in this era of electronic advancement, is under continual technological change and development. The familiar challenges of the country—its size, its topography, its climate, its small population—which have reared their heads in other areas of development, have had to be faced as well in the field of communications. That these have been overcome is evidenced by the fact that today Canada possesses communication facilities and services second to none in the world.

Section 1.—Telecommunications*

During the past half-century, Canada has experienced tremendous economic expansion. Population growth and the advance to new industrial frontiers have been matched by an upward surge in national productivity and general standard of living. Continuing development of Canada is dependent on both individual pioneering and the co-operative efforts of many industries and the telecommunications industry is filling a vital role in this drama of growth.

Business and industry have expanded and ventured into isolated areas assisted and promoted by Canadian telecommunications industries which have anticipated the needs of the future with vast programs of development in virgin territories. Technological development has been particularly important to the extension of telecommunications in Canada. To meet the demands placed upon it, the industry has constantly introduced newer and better equipment, tools and methods of operation. In the growth of urban centres, the development of rural communities and the pioneering of new territory, Canadian telecommunications agencies have constantly sought to provide the highest quality of service for the greatest number of people. The major railways, the hundreds of co-operating telephone companies, the radio and television companies and federal communications organizations work together with a common purpose, building networks of telecommunications from coast to coast. They provide such familiar services as telephone, telegraph, teletype, radio and television, and many other related means of communication; in addition, mutual co-operation has allowed them to satisfy a variety of defence needs.

* Textual data in the introduction of this Section and in Subsection 2 was prepared by The Bell Telephone Company of Canada, Montreal. Statistical material of Subsection 2 and Subsection 3 was revised in the Public Finance and Transportation Division, Dominion Bureau of Statistics. Subsections 1 and 4 to 7 were revised in the Telecommunications and Electronics Branch of the Department of Transport, Ottawa.

Subsection 1.—Government Control over Telecommunications Agencies

Telephone and telegraph companies incorporated under the Federal Government are subject to the jurisdiction of the Board of Transport Commissioners in the matter of rates and practices under the provisions of the Railway Act (see also p. 804); other companies are responsible to provincial regulatory bodies. In addition, tolls charged to the public for radio communications service are subject to the provisions of the Regulations made under the Radio Act. Overseas cables landed in Canada are subject to the External Submarine Cable Regulations under the Telegraphs Act.

Except for those matters covered by the Broadcasting Act, radio communications in Canada are regulated under the Radio Act and Regulations which include control of any equipment liable to cause interference to radio or television reception (see also p. 896). In addition, all radio communication matters are administered in accordance with the provisions of the International Telecommunication Convention and Radio Regulations annexed thereto and in accordance with such regional agreements as the Inter-American Telecommunications Convention and Inter-American Radio Agreement, and the North American Regional Broadcasting Agreement. (See also p. 895.)

National radio broadcasting in Canada entered its present phase in 1936 when, with the passage of the Canadian Broadcasting Act, the Canadian Broadcasting Corporation replaced the Canadian Radio Broadcasting Commission. The Act gave the Corporation wide powers in the operation of the system and gave to the Minister of Transport the technical control of all broadcasting stations.

During 1958 the Government established a Board of Broadcast Governors and the Canadian Broadcasting Corporation Board of Governors was abolished. The Board of Broadcast Governors regulates the establishment and operation of networks of sound and television broadcasting stations, the activities of public and private broadcasting stations and the relationship between them, in the interest of providing a national broadcasting service of high standard, basically Canadian in content and character. While the Minister of Transport is the licensing authority under the Radio Act, the Broadcasting Act requires that the applications for broadcasting station licences or for any change in an existing broadcasting station be referred to the Board of Broadcast Governors for its recommendation before being dealt with by the Department.

Subsection 2.—Telephones

Alexander Graham Bell first transmitted human speech through electrically energized equipment in March 1876, and in August of the same year a one-way call from Brantford to Paris in Ontario marked the first successful long-distance test of the new invention. Soon after the instrument was perfected, telephone exchanges sprang up in many Canadian communities, sometimes two competing companies in one place. As a result, in April 1880 The Bell Telephone Company of Canada was established by Act of Parliament and authorized as the official agent for telephone service in thirty-two cities and towns across the country. However, it came to be recognized that, in the existing state of the industry, one company could scarcely develop and organize service over so wide a territory and separate companies were set up in British Columbia. The Bell Telephone withdrew from the Maritime Provinces in the 1880's and installations in the Prairie Provinces were sold to the respective provincial governments in 1908-09. The seven major telephone systems that developed across Canada worked together to establish long-distance service on a national basis and in 1931 they founded the Trans-Canada Telephone System, which now has eight full members including both shareholder-owned companies and provincial government systems. They are as follows:—

The Avalon Telephone Company Limited (joined in 1957)
Maritime Telegraph and Telephone Company Limited
The New Brunswick Telephone Company Limited
The Bell Telephone Company of Canada (serving Ontario and Quebec)
Manitoba Telephone System
Saskatchewan Government Telephones
Alberta Government Telephones
British Columbia Telephone Company.

These eight systems, together with the Island Telephone Company (P.E.I.), Québec Téléphone (lower St. Lawrence), Ontario Northland Communications, the Okanagan Telephone Company, and the North-west Telephone Company (associated with the British Columbia Telephone Company) comprise the Telephone Association of Canada. This organization was established to ensure general co-operation in telephone matters.

As already mentioned, the steadily rising demand for local and long-distance service has called not only for general expansion of Canadian telephone systems but for the constant introduction of modern facilities and services. A number of Canadian companies have developed what is called "Extended Area Service" in many of the communities they serve. This plan eliminates long-distance charges between the larger centres and their suburbs, or between two or more places with close community of interest.

As part of the transmission facilities needed to carry the great volume of long-distance traffic as well as network television programs, the members of the Trans-Canada Telephone System collaborated to build a microwave radio relay network spanning Canada from coast to coast. The longest such network in the world, it was placed in operation on July 1, 1958. It is maintained jointly, each system member being responsible for the section falling in its operating territory. This network, ultimately capable of carrying 2,400 long-distance conversations and two television programs at the same time, is steadily being expanded toward the limit of its capacity. In addition, extensions to the original network have been made, bringing long-distance telephone service and television programs to many more remote areas.

For several years operators have been dialing many long-distance calls direct to the wanted telephone. The modern switching system which makes this possible also permits customer dialing of long-distance calls. Known as Direct Distance Dialing, customer dialing of long-distance calls has been in effect for some time in the Toronto, Windsor and Guelph areas in Ontario. In 1960 it is being introduced in Montreal and Valleyfield in Quebec, and in Cornwall, London, St. Thomas, Fort Erie and Stratford in Ontario. It will also be introduced in 1960 in Nanaimo and Okanagan, B.C. A long-range international plan, developed by the telephone companies of Canada and the United States, will eventually allow practically every telephone-user in North America to dial direct to almost any other telephone on the Continent. Direct dialing, an added convenience for telephone customers, will allow Canadian telephone companies to handle economically the ever-growing volume of long-distance calls.

The northward extension of industry in Canada has, of course, required the northward expansion of telephone communications. The North-west Telephone Company operates a radio chain from Vancouver up the British Columbia coast to Kitimat. Uranium City in northern Saskatchewan, located in a vast area of muskeg and swamp, is provided with communications through a radio network out of Prince Albert, Sask. In Manitoba, the radio-telephone service reaches out to a large number of isolated settlements and bush camps, and also provides communications for aircraft and for boats plying Lake Winnipeg. Goose Bay in Labrador and the iron-ore-rich Schefferville area of the Quebec-Labrador boundary are now in immediate telephone contact with the remainder of the world through a radio relay network operated out of Quebec City through Sept Îles. A branch of this system, built in 1959, extends long-distance service to the new mining settlement of Gagnon, Que. In the same year, Bell Telephone opened its farthest-north exchange at Frobisher on Baffin Island.

Numerous flexible services are provided by Canadian telephone companies for business and industry. Special conference circuits can be quickly arranged, enabling widely scattered business interests to discuss their affairs without the inconvenience and expense of

travel. Data transmitting and processing facilities allow rapid exchange of coded and printed information between plants, warehouses, retail outlets and many other business and industrial locations. Telephoto and facsimile provide photographic copy direct from the originator. Radio installations link the traveller with the regular telephone network, providing mobile service for such users as highway departments, trucking and construction firms, fire and ambulance services, and police departments. Oil pipeline companies also use the service as part of their communications arrangements to maintain contact between central offices, storage tanks, pumping stations and control units.

There is a significant demand for telephone service which is both efficient and attractive in appearance. Telephones in a wide range of colours for home and office are steadily increasing in popularity. Business telephone users have been quick to accept the products of telephone research, such as the Call Director, a telephone offering a flexible combination of dial telephone and push-button intercommunication system. The ready acceptance of these and many other new concepts in home and business telephone service has helped to create employment in allied industries for many Canadians.

Telephone Statistics.—There were 2,619 telephone systems operating in Canada in 1958 compared with 2,637 in 1957. The number of co-operative systems in rural districts increased from 2,177 to 2,184 but the number of shareholder-owned companies decreased from 330 to 318. The largest of the stock companies, The Bell Telephone Company of Canada, operating throughout the greater part of Ontario and Quebec, served 61 p.c. of all the telephones in Canada, and the British Columbia Telephone Company, also shareholder-owned, served 9 p.c. of the total.

The number of telephones in use in Canada has risen by 90 p.c. in the past ten years. At Dec. 31, 1958 there were 5,118,293 telephones in service compared with 4,827,135 in 1957 and 2,699,612 in 1949. The number of residential telephones and the number of business telephones increased by 7 and 6 p.c., respectively, during 1958. Rural telephones were up 3 p.c. and pay telephones 4 p.c. By the end of the year, 82 p.c. of all telephones in Canada were dial-operated as compared with 80 p.c. in 1957. Pole-line mileage and wire mileage continue to increase year after year.

1.—Mileages of Pole Line and Wire and Number of Telephones in Use, 1949-58

NOTE.—Figures from 1911 are given in the corresponding table of previous Year Books beginning with the 1938 edition.

Year	Sys- tems	Pole-Line Milage ¹	Milage of Wire	Telephones in Use						Per 100 Popu- lation
				Business	Resi- dential	Rural ²	Public Pay	Total		
No.	miles	miles	No.	No.	No.	No.	No.	No.		
1949.....	2,971	242,147	8,725,760	762,294	1,481,876	414,061	41,381	2,699,612	19.9	
1950.....	2,912	245,443	9,488,467	813,352	1,611,759	447,691	44,290	2,917,092	21.1	
1951.....	2,904	249,638	10,330,751	864,015	1,735,355	467,171	47,225	3,113,766	22.2	
1952.....	2,888	253,420	11,265,903	920,269	1,888,889	492,753	50,455	3,352,366	23.2	
1953.....	2,793	257,059	12,307,070	988,489	2,053,944	513,061	50,913	3,606,407	24.4	
1954.....	2,788	257,444	13,357,289	1,053,852	2,213,154	538,660	54,603	3,860,269	25.4	
1955.....	2,739	259,784	14,758,160	1,132,436	2,408,959	552,838	57,445	4,151,678	26.6	
1956.....	2,661	269,303	16,410,897	1,229,150	2,625,787	584,484	59,904	4,499,325	28.0	
1957.....	2,637	274,334	18,161,444	1,304,514 ^r	2,852,875	609,343	60,403 ^r	4,827,135	29.1	
1958.....	2,619	280,884	20,250,410	1,379,205	3,050,812	625,453	62,823	5,118,293	30.0	

¹ Includes underground conduits and buried cable.

² Includes telephones on rural exchange lines and urban exchange lines having more than four parties.

The density of telephones in the different provinces is influenced by the urbanization of the population and the number of telephones used for business purposes.

2.—Telephones in Use, by Province, 1958

Province or Territory	On Individual Lines		On 2- and 4-Party Lines		On Rural Lines		Private Branch Exchanges and Extensions		Public Pay Telephones	Total	Telephones per 100 Population
	Business	Residence	Business	Residence	Business	Residence	Business	Residence			
	No.	No.	No.	No.	No.	No.	No.	No.			
Nfld.....	4,808	8,964	301	18,143	429	1,843	9,026	2,919	561	46,994	10.7
P.E.I.....	1,744	3,581	106	3,169	314	4,429	1,994	797	110	16,244	16.2
N.S.....	13,458	55,712	517	26,842	1,898	25,022	21,360	11,307	2,103	158,219	22.3
N.B.....	9,761	25,661	993	33,723	1,273	18,836	17,660	7,524	1,455	116,886	20.3
Que.....	121,628	409,804	7,472	338,157	14,917	109,387	245,624	93,180	23,057	1,363,226	27.9
Ont.....	178,811	551,252	7,927 ¹	576,839 ¹	11,350	194,863	377,025	164,726	26,129	2,088,922	36.0
Man.....	22,602	65,555	427	79,272	4,960	28,050	36,945	10,649	2,170	250,630	28.8
Sask.....	22,614	101,065	200	1,716	3,327	56,953	23,722	6,940	1,442	217,979	24.5
Alta.....	45,806	172,549	1	22	1,313	28,222	57,414	19,014	1,872	326,213	27.2
B.C.....	56,151	21,689	347	209,339	4,561	113,441	92,706	30,598	3,924	532,756	34.5
Yukon.....	27	7	23	97	23	42	5	—	—	224	1.7
Totals....	477,410	1,415,839	18,314	1,287,319	44,365	581,088	883,481	347,654	62,823	5,118,293	30.0

¹ Ontario four-party telephones included under Rural Lines.

The major telephone systems record completed calls on representative days throughout the year and on this basis estimate the number of local conversations which, added to the actual count of long-distance calls, gives their total volume of business. Estimates are included for the smaller systems. The number of completed calls on all systems in 1958 was estimated at 8,707,631,000 compared with 8,255,709,000 calls in 1957, or an average of 1,701 calls per telephone and 511 calls per person compared with 1,710 calls per telephone and 498 calls per person in 1957.

Extended area service which eliminates toll charges between adjacent communities was introduced in more centres across Canada but, despite this service, long-distance calls increased by 7,328,000 from 1956 to 1957 and by 15,578,000 from 1957 to 1958.

3.—Local and Long-Distance Calls and Average Calls per Telephone and per Capita, 1949-58

NOTE.—Figures from 1928 will be found in the corresponding table of previous Year Books beginning with the 1939 edition.

Year	Local Calls	Long-Distance Calls	Total Calls	Total Calls per Capita ¹	Average Calls per Telephone		
					Local	Long-Distance	Total
	No.	No.	No.	No.	No.	No.	No.
1949.....	4,454,024,000	105,232,000	4,559,256,000	339	1,650	39.0	1,689
1950.....	4,894,719,000	117,892,000	5,012,611,000	366	1,678	40.4	1,718
1951.....	5,146,238,000	127,406,000	5,273,644,000	376	1,653	40.9	1,694
1952.....	5,482,973,000	126,721,000	5,609,694,000	389	1,635	37.8	1,673
1953.....	5,952,756,000	131,899,000	6,084,655,000	412	1,650	36.6	1,687
1954.....	6,209,771,000	137,761,000	6,347,532,000	418	1,608	35.7	1,644
1955.....	6,808,389,000	153,087,000	6,961,476,000	446	1,640	36.8	1,677
1956.....	7,593,525,000	171,280,000	7,764,805,000	486	1,688	38.0	1,726
1957.....	8,077,101,000	178,608,000	8,255,709,000	498	1,673	37.0	1,710
1958.....	8,513,445,000	194,186,000	8,707,631,000	511	1,663	37.9	1,701

¹ Per capita figures are based on official estimates of population given at p. 196.

The steady increases in capitalization, income and expenditure of telephone companies together with the increases in number of employees and salaries and wages paid are shown for the years 1949-58 in Table 4. Provincial figures for 1958 are given in Table 5.

4.—Financial Statistics of Telephone Systems, 1949-58

NOTE.—Figures from 1911 are given in the corresponding table of previous Year Books beginning with the 1938 edition.

Year	Capital Stock	Funded Debt	Cost of Property and Equipment	Income	Expenditure	Net Income	Em- ployees	Salaries and Wages
	\$	\$	\$	\$	\$	\$	No.	\$
1949.....	229,208,219	267,987,289	716,519,781	169,113,048	153,066,308	16,046,740	42,326	90,634,477
1950.....	274,088,405	286,752,783	806,826,198	198,823,483	178,193,661	20,629,822	45,396	102,093,078
1951.....	286,003,119	307,623,351	909,581,399	240,763,657	213,824,471	26,938,186	47,387	117,677,652
1952.....	335,575,292	378,628,224	1,027,527,807	279,001,814	244,506,402	34,495,412	48,207	131,370,832
1953.....	398,198,697	450,511,233	1,152,309,749	310,833,599	269,817,828	41,015,771	50,540	145,109,934
1954.....	418,287,016	498,231,715	1,301,545,688	340,623,170	296,384,292	44,238,878	51,929	159,329,238
1955.....	467,026,669	521,336,006	1,470,679,433	376,716,651	328,880,674	47,835,977	55,673	173,922,973
1956.....	549,266,657	583,795,407	1,672,363,570	422,370,206	366,117,634	56,252,572	60,121	193,992,142
1957.....	627,051,991	683,386,827	1,941,591,700	467,701,983	412,158,348	55,543,635	64,074	219,693,002
1958.....	639,824,492	845,613,559	2,202,747,303	507,689,602	451,672,799	56,016,803	61,400	234,298,163

5.—Financial Statistics of Telephone Systems, by Province, 1958

Province or Territory	Capital Liability	Cost of Property and Equipment	Income	Expenditure	Em- ployees	Salaries and Wages
	\$	\$	\$	\$	No.	\$
Newfoundland.....	11,085,063	14,718,913	2,473,222	1,763,231	514	1,113,131
Prince Edward Island.....	3,609,000	5,322,094	1,184,204	1,030,648	155	362,344
Nova Scotia.....	42,291,432	60,222,770	13,882,027	11,944,743	1,840	5,494,847
New Brunswick.....	44,766,583	59,720,657	12,230,759	10,712,760	1,586	4,855,507
Quebec ¹	905,087,190	1,417,589,859	346,068,124	305,332,388	17,216	73,088,364
Ontario ¹	20,804,291	35,355,286	11,612,723	9,866,380	23,246	90,530,728
Manitoba.....	82,782,389	116,945,987	19,042,679	18,628,742	3,363	10,839,652
Saskatchewan.....	81,981,337	109,545,380	21,480,566	20,180,066	2,002 ²	7,325,640 ²
Alberta.....	105,912,617	145,222,874	28,717,057	25,886,522	4,109	13,870,893
British Columbia.....	187,053,149	238,070,284	50,976,398	46,304,105	7,366	26,802,437
Yukon.....	65,000	33,199	21,843	23,214	3	14,620
Totals.....	1,485,438,051	2,202,747,303	507,689,602	451,672,799	61,400	234,298,163

¹ Statistics of The Bell Telephone Company of Canada for both Quebec and Ontario are included under Quebec.

² Excludes wages and employees for rural systems.

Subsection 3.—Telegraphs

At the end of 1959 nine telegraph and cable companies were in operation in Canada. These systems, composed of lines owned by the Federal Government and the chartered railway and telegraph companies, including the Canadian Overseas Telecommunications Corporation (see p. 892), increased their property and equipment to \$226,914,034, more than 14 p.c. above that reported in 1958. A new record was set for operating revenues at \$52,962,913, up 11 p.c. from the previous high of 1958, and net income also rose to a new high of \$8,391,094, 23 p.c. over the 1958 figure. Fewer telegrams were sent, the lowest number since 1942, but cablegrams increased again in 1959 to 2,602,974, after showing a decrease in 1958.

6.—Summary Statistics of Canadian Telegraphs, 1950-59

NOTE.—Figures from 1920 are given in the corresponding table of previous Year Books beginning with the 1938 edition.

Year	Gross Revenue	Operating Expenses	Net Operating Revenue	Pole-Line Milage	Wire Milage	Employees ¹	Messages, Land ²	Cable-grams and Marconigrams ³	Money Transferred
	\$	\$	\$	miles	miles	No.	No.	No.	\$
1950.....	23,922,225	22,545,625	1,376,600	51,999	414,943	9,757	20,477,775	1,687,721	12,733,989
1951.....	29,128,473	27,807,547	1,320,926	53,580	435,348	10,611	21,815,837	1,785,836	16,955,699
1952.....	33,093,843	31,617,156	1,476,687	52,699	437,581	11,272	21,614,196	1,934,433	19,514,490
1953.....	36,920,384	33,953,196	2,967,188	52,727	450,835	11,618	21,222,706	2,042,921	21,553,387
1954.....	38,203,590	33,203,942	4,999,648	46,284	434,178	10,629	19,906,354	2,105,513	21,550,372
1955.....	39,320,960	32,501,844	6,819,116	48,067	438,692	10,852	20,067,424	2,238,433	23,264,851
1956.....	40,720,213	33,688,888	7,031,325	48,062	442,891	10,833	20,381,641	2,429,893	24,295,308
1957.....	44,796,778	39,271,893	5,524,885	48,379	451,669	11,159	19,163,723	2,580,745	25,586,057
1958.....	47,633,991	39,908,538	7,725,453	47,495	464,661	10,587	17,296,786	2,499,871	24,434,887
1959.....	52,962,913	43,511,666	9,451,247	47,470	486,875	10,586	16,390,997	2,602,974	25,589,067

¹ Excludes commission operators.

² Includes messages to and from vessels on the Great Lakes and the St. Lawrence River and messages to and from stations.

³ Excludes relayed messages.

Subsection 4.—Overseas Telecommunication Services

The Canadian Overseas Telecommunication Corporation was established in 1950 to maintain and operate, in Canada and elsewhere, external telecommunication services for the conduct of public communications by cable, radiotelegraph and radiotelephone and any other means of telecommunication between Canada and any other place and between Newfoundland and any other part of Canada; to make use of all developments in cable and radio transmission and reception for external telecommunication services; to conduct investigation and research with the object of improving and co-ordinating such telecommunication services with the telecommunication services of other parts of the Commonwealth.

In 1952 the Corporation commenced an expansion program of overseas services designed to meet future requirements and the following services have so far been established: direct radiotelegraph communications between Canada and France, Italy and Germany; direct radiotelegraph, radiotelephone, telex and picture transmission services with Australia, New Zealand and Japan from stations at Ladner and Cloverdale, B.C.

In 1956 the first transatlantic telephone cable, a joint project with the British Post Office, American Telephone and Telegraph Company and the Corporation, was brought into service. Apart from normal use of the system for public telephone and telegraph message traffic, capacity is available for private leased circuits. The Corporation introduced the International Telex service into Canada in 1956 and service with 46 countries is now available. The first transatlantic slow-scan television pictures were transmitted between Canada and the United Kingdom in 1959. Twenty-four telephone circuits have been provided and are now in use between the mainland and Newfoundland.

At present under construction is the Canada-United Kingdom 80-circuit telephone cable scheduled for completion in 1961. Jointly with the Great Northern Telegraph Company, the Corporation will provide a Canada-Greenland-Iceland 24-circuit telephone cable—primarily to meet the North Atlantic communication needs of international civil aviation—scheduled to come into operation in 1962. A four-party project (Canada, United Kingdom, Australia and New Zealand) will provide a Canada-New Zealand-Australia 80-circuit telephone cable. This section of the Commonwealth round-the-world telephone cable system is scheduled for completion early in 1964.

In addition to the overseas services operated by the Canadian Overseas Telecommunication Corporation, two cable companies operate submarine cables landing in Canada—the Commercial Cable Company and the Western Union Telegraph Company.

These companies operate to stations in the United Kingdom, Ireland, the United States, the Azores and St. Pierre and Miquelon Islands. The Eastern Telephone and Telegraph Company owns and maintains radio relay and cable facilities between Nova Scotia and Newfoundland. The number of cables operating between connected stations and the length of cables are given in the following table.

7.—Cable Landings in Canada, 1958

Company and Station	Cables	Nautical Miles
	No.	No.
Canadian Overseas Telecommunication Corporation—		
Halifax, N.S. to St. John's, Nfld.....	1	667
Bamfield, B.C. to Port Alberni, B.C.....	1	30
North Sydney, N.S. via Nfld. to Oban, Scotland.....	1	2,280
Bamfield, B.C. to Auckland, New Zealand.....	1	6,748
Bamfield, B.C. to Sydney, Australia.....	1	7,830
Halifax, N.S. to Bermuda.....	1	874
Halifax, N.S. to Porthcurno, England.....	1	3,078
St. John's, Nfld. to Porthcurno, England.....	1	1,989
Commercial Cable Company—		
Canso, N.S. to St. John's, Nfld.....	2	913
Canso, N.S. to Far Rockaway, N.Y., U.S.A.....	3	2,890
Canso, N.S. to Horta, Fayal, Azores.....	2	3,426
St. John's, Nfld. to Far Rockaway, N.Y., U.S.A.....	2	2,587
St. John's, Nfld. to Waterville, Ireland.....	4 ¹	7,086
Eastern Telephone and Telegraph Company—		
Sydney Mines, N.S. to Terrenceville, Nfld.....	1	271
Terrenceville, Nfld. to Clarenville, Nfld.....	1	55
Western Union Telegraph Company—		
North Sydney, N.S. to St. Pierre and Miquelon Islands.....	3	594
North Sydney, N.S. to Island Cove, Nfld.....	2	635
North Sydney, N.S. to Colinet, Nfld.....	1	323
Island Cove, Nfld. to St. Pierre and Miquelon Islands.....	1	130
Placentia, Nfld. to St. Pierre and Miquelon Islands.....	2	250
Canso, N.S. to North Sydney, N.S.....	1	118
Canso, N.S. to Duxbury, Mass., U.S.A.....	1	577
Bay Roberts, Nfld. to Penzance, England.....	4	8,479
Bay Roberts, Nfld. to Horta, Azores.....	1	1,343
Bay Roberts, Nfld. to Hammel, N.Y., U.S.A.....	2	2,778
Heart's Content, Nfld. to Valentia, Ireland.....	3	5,656

¹ One cable not operating.

Subsection 5.—Federal Government Telegraph and Telephone Services and Meteorological Communications

Telegraph and Telephone Services.—The Telecommunications and Electronics Branch of the Department of Transport provides a telephone service to some communities on Cape Breton Island and, by submarine cable, to certain islands off the Atlantic Coast of Nova Scotia; telephone and telegraph services on the Magdalen Islands; and a telegraph service to a few isolated places in Labrador.

As of Mar. 31, 1960, these services comprised 346.44 miles of pole line, 818.8 miles of open wire, 77.18 miles of aerial cable, 30.3 miles of submarine cable, and seven radiotelephone stations. Telephone service was provided for 1,583 subscribers, of whom 331 were served through lines connected with private company exchanges.

Meteorological Communications.—Weather stations operated by the Meteorological Branch of the Department of Transport throughout Canada are linked coast-to-coast by means of teletype and in the remote northern areas by radio or radioteletype. The

landline teletype circuits are leased from commercial companies. The radio circuits are operated chiefly by the Telecommunications and Electronics Branch of the federal Department of Transport.

Weather stations on the teletype network transmit their reports directly; other stations report via commercial or radio facilities to the nearest station on the teletype line for subsequent transmission on the meteorological circuit. The reports are collected on a regional basis and then relayed to other parts of the country as required. There are two coast-to-coast systems transmitting weather information, with main relay points at Vancouver, Edmonton, Winnipeg, Toronto, Montreal, Moncton, Halifax, Gander and Goose Bay. These main meteorological communications centres not only handle the distribution of weather information within Canada including the Arctic, but also effect international exchange with the United States and Europe and, through them, with many other countries. For the latter purpose, the Canadian Meteorological Branch and the British Meteorological Office share the cost of a leased duplex circuit in the transatlantic cable. Altogether, the Meteorological Branch uses 55,200 miles of teletype circuits connecting 327 teletype offices.

In addition, a facsimile network connects forecast offices in all parts of the country including radio facsimile transmission to Arctic stations and ships at sea. Certain functions of the forecast offices are carried out at one central location and the processed data, in the form of weather maps, are then distributed over the facsimile network throughout the country. Chart transmissions from the Central Analysis Office in Montreal are made simultaneously to all parts of Canada. Altogether, the Meteorological Branch utilizes 11,200 miles of facsimile circuits, serving 58 forecast offices.

Subsection 6.—Federal Government Radio Communication Services

Radio in Canada traces its origin to the year 1900 when wireless telegraphy was introduced and placed under the jurisdiction of the Department of Public Works. The first commercial radio circuit was established between Chateau Bay, Que., and Belle Isle in the Strait of Belle Isle in 1901, replacing an underwater cable which was difficult to maintain. In the first days of radio there did not appear to be any necessity for special legislative control, but the growth of this new medium of communication was very rapid and the Wireless Telegraph Act of 1905 became the first legislation in Canada controlling radio communication.

Radio regulation and radio coast station services were under the jurisdiction of the Department of Public Works until 1909 at which time they were transferred to the Department of Marine and Fisheries where they remained until 1930, with the exception of the period 1914-22 when they were under the jurisdiction of the Department of Naval Services. In 1930, when a separate Marine portfolio was established, they became a Branch of that Department and then in 1936 a Division of the Air Services Branch of the newly formed Department of Transport. In 1936 an aviation radio service was organized within the Radio Division, and to it in 1948 was transferred the Government Telegraph and Telephone Service, which had been under the jurisdiction of the Department of Public Works since 1879. In 1950, the name was changed to Telecommunications Division, and later to Telecommunications and Electronics Branch.

The radio activities of the Telecommunications and Electronics Branch may be summarized as follows: (1) the administration of national and international radio laws and regulations and of regional agreements, involving the issuance of radio licences, inspection of radio stations, certification of radio equipment, examination of operators, allocation and monitoring of frequencies, study of radio wave propagation, compilation and settling of international accounts for radio messages, investigation and suppression of inductive interference to radio reception; and (2) construction, maintenance and operation of radio communication stations and radio aids to marine and air navigation.

The national and international radio laws and regulations and the regional agreements administered by the Telecommunications and Electronics Branch include: (1) the Broadcasting Act; the Radio Act and Regulations made thereunder; the radio provisions of the

Canada Shipping Act and Ship Station Radio Regulations; (2) the International Telecommunications Convention and Radio Regulations annexed thereto; the Articles of the International Civil Aviation Convention applicable to aeronautical radio requirements; that part of the International Convention for the Safety of Life at Sea applicable to radio requirements for ships; the Inter-American Telecommunication Convention; the Inter-American Radio Agreement; the North American Regional Broadcasting Agreement; the Convention between Canada and the United States of America relating to the operation by citizens of either country of certain radio equipment or stations in the other country; and the Agreement between Canada and the United States of America for the promotion of safety on the Great Lakes by means of radio.

Licensing and Operation.—In all branches of radio, basic control is exercised over the right to establish a station, assignment of frequencies, operator standards, operating procedure, and general regulations concerning the manner in which radio stations are used.

Under the Broadcasting Act, the Board of Broadcast Governors regulates the establishment and operation of broadcasting networks, the activities of public and private broadcasting stations and the relationship between them, in the interest of providing a national broadcasting service of high standard, basically Canadian in content and character. While the Minister of Transport is the licensing authority under the Radio Act, the Broadcasting Act requires that applications for broadcasting station licences or for any change in an existing broadcasting station be referred to the Board of Broadcast Governors for its recommendation before being dealt with by the Department. Reasonably complete and technically acceptable applications are therefore referred to the Board of Broadcast Governors by the Department. Before such a licence may be issued, the approval of the Governor in Council is also required. With these exceptions, the technical control of broadcasting stations is carried out by the Telecommunications and Electronics Branch of the Department of Transport.

The standard broadcast band is crowded with stations that are capable of interfering with one another over the entire North American region, particularly at night. A plan for the accommodation of the largest number of stations with the least interference was evolved as a result of extensive studies conducted by Canada, Cuba, the Dominican Republic, Haiti, the Bahama Islands, Mexico, and the United States and was embodied in the North American Regional Broadcasting Agreement.

Before a new standard broadcasting station can be licensed or before modifications can be made in an existing station, engineering briefs covering the selection or change of frequency, amount of power and design of the directional antenna system must be approved by the Department of Transport and notification sent to the signatory countries of the North American Regional Broadcasting Agreement. After the establishment or change is completed, proof of performance must be submitted to establish that the actual installation is in accordance with the approved plan.

Ten monitoring stations are maintained at suitable points across Canada to police and monitor the radio spectrum: to see that radio stations are complying with the procedure set forth for their particular service; to observe the emissions from stations and ensure that they comply with the rules applicable to their service; to detect non-licensed stations and ensure that stations are being used for the purpose for which they are licensed; to assist in the investigation of cases of inter-station interference; to make studies of spectrum occupancy with a view to finding spectrum space for new assignments; and to make precise frequency measurements to determine if the operating frequencies of all classes of radio stations are within the tolerances as prescribed by domestic and international regulations. A mobile monitoring station is being equipped to carry out the investigation of those technical and operational aspects of emissions on frequencies that cannot be monitored by stations in fixed locations.

Under the Safety of Life at Sea Convention and the Canada Shipping Act, most passenger ships and larger cargo ships must be fitted with radiotelegraph or radiotelephone equipment, primarily for distress use. Approval is given for each make and model of

equipment that comes up to the required standard and, in addition, the ship station as a whole is inspected after the licence is issued and periodically thereafter. Foreign ships are subject to inspection before sailing from Canadian ports to ensure that they conform with the requirements of the Safety of Life at Sea Convention. Also, certain passenger, cargo, and other ships plying the Great Lakes are inspected to ensure compliance with the requirements of the agreement between Canada and the United States for the promotion of safety on the Great Lakes by means of radio.

Standards have been developed for the installation of aircraft radio stations specifying in detail the techniques and materials that may be used, to ensure that such stations will satisfactorily perform the function for which they are intended. Inspections of radio stations aboard civil aircraft of all operational categories are carried out at prescribed periods. In-flight inspections of the radio communications and navigational aspects of proposed new air carrier operations, encompassing both land and oceanic routes, are also made as required.

Marine and aeronautical radio operator standards and related regulations are covered by international agreement. The International Telecommunication Convention prescribes the qualifications for radio operators on mobile stations and the Radio Act provides that all operators, both commercial and amateur, must pass examinations to prove their ability to operate the respective classes of stations on which they are engaged. Competent operators are required on all classes of station in order that the technical requirements prescribed under international agreement be adhered to closely; they are particularly essential on ship and aircraft stations in the interests of safety of life.

Investigation and Suppression of Inductive Interference.—Under the Radio Act the use of electrical equipment that will produce harmful interference to radio reception is not permitted. The Telecommunications and Electronics Branch of the Department of Transport maintains 63 cars equipped for measuring and locating sources of interference to broadcast, television and other radio reception. In addition to locating the sources of interference, advice is given as to how it may be suppressed or eliminated. These cars operate from the permanent radio inspection offices located in 28 cities throughout Canada. During the year 1958, 18,315 sources of interference were located and suppression was obtained in all but a few cases. Power lines were the largest single source of interference, constituting 63 p.c. of the total. Apart from cases of actual interference, the Branch also gives technical advice and assistance to manufacturers of electrical apparatus, in an effort to reduce to acceptable levels the radio noise (interference) produced by such apparatus.

Recent amendments to the Radio Act provide for the prohibiting of the sale of electrical apparatus which will produce radio noise (interference) in excess of specified limits. Regulations specifying the limits to be met by particular types of apparatus are contained in the Radio Noise Limits Order.

Another recent amendment to the Radio Act provides for exemption from the operation of the Act certain low-powered radio transmitting and receiving equipment which has been so Type Approved by the Department. Exemption approval has been granted to a number of models of garage door radio controls and other devices, which consequently may be operated without the radio station licence otherwise required.

Radio Revenue.—Regulations concerning the rendering and settlement of international ship-shore traffic accounts are contained in the International Telecommunication Convention and Regulations. Sources of revenue include commercial ship and inter-station messages handled by Departmental ship and land stations, radiotelegrams exchanged by foreign ships through Canadian coast stations, private commercial traffic *via* Departmental airway radio stations, and radio services rendered to aircraft of private airline companies by such stations. During the year ended Mar. 31, 1959, accounts with a gross value of \$439,885 were handled with respect to chargeable traffic *via* Marine Radio Stations consisting of 126,512 ship-shore radiotelegrams, 61,331 point-to-point messages

and 28,804 duplex radiotelephone conversations. For air-to-ground and message communication services provided by aeronautical stations, accounts were handled with a total value of \$907,997.

8.—Radio Revenue Collected by the Department of Transport, Year Ended Mar. 31, 1959

Stations	Revenue	Stations	Revenue
	\$		\$
Marine Stations—		Other Radio Revenue—concluded	
Private commercial messages and duplex radiophone calls.....	462,275	Licence fees (excluding private commercial broadcasting).....	271,458
Premium revenue.....	18,235	Rentals.....	319,715
		Miscellaneous.....	134,678
Aeronautical Stations—		Totals.....	2,054,539
Air-to-ground and message communication services.....	842,468		
Other Radio Revenue—		Collected from issue of private commercial broadcasting licences.....	470,248
Examination fees—Radiotelegraph Operators' Certificate of Proficiency.....	5,710		

Radio Aids to Marine and Aeronautical Navigation.—Services of the Telecommunications and Electronics Branch of the Department of Transport in aid of marine and aeronautical navigation are described in the following paragraphs. Details may be obtained on request from the Department of Transport, Ottawa.

Marine Navigation.—Radio aids to marine navigation are provided for about 4,000 radio-equipped Canadian vessels and almost as many foreign ships using Canadian waters. A safety and communications service for shipping is provided covering the East and West Coasts, the Great Lakes, the St. Lawrence River and Gulf, Hudson Bay and Hudson Strait.

Coast radio stations provide a safety watch and communications service for ships at sea and provide, as well, regularly broadcast weather reports, storm warnings and notices of dangers to navigation. Ships at sea may obtain medical advice from any coast station. The messages are delivered to the port medical officer of the Department of National Health and Welfare and replies are transmitted to the ship free of charge. The stations carry out communications by radiotelegraph and/or radiotelephone, and many of them provide connections to land telephone lines so that ships may communicate directly with any telephone subscriber. At Halifax (CFH) and Vancouver (CKN), shortwave facilities are furnished for world-wide communications. These stations participate in the Commonwealth long-range ship communication scheme. The coast stations on Hudson Bay and Hudson Strait, in addition to the regular services, provide commercial communications for posts of the Hudson's Bay Company and various prospecting and development organizations, make weather observations, handle administrative traffic and assist aircraft with information, landing conditions and direction finding bearings.

Coast radio direction finding stations, operated on the Atlantic Coast and on Hudson Strait, enable ships to obtain a line of bearing from the station. No charge is made for this service. A chain of automatic *radiobeacon stations* is also maintained to provide a navigational aid to mariners by transmitting signals on which bearings may be taken by ships. These stations are arranged, where possible, in groups of three, transmitting on a common frequency but in proper time sequence so as to avoid interfering with one another.

A navigator may thus obtain three bearings within three consecutive minutes and fix his location. For distance finding in foggy weather, a number of radiobeacons are synchronized with fog alarms at the same point. Ships may also request the transmission of signals from the coast stations for direction finding purposes.

Loran is a long-range radio aid to marine and air navigation which provides accurate fixes at distances up to 600 miles by day and 1,500 miles by night. Two Loran stations operate in Nova Scotia, three in Newfoundland and one on the West Coast. These stations, in conjunction with Loran stations of the United States Coast Guard, give service to ships and aircraft plying the North Atlantic and Pacific Oceans.

Decca is a short-range radio aid to navigation which provides accurate fixes at distances up to 250 miles. Four chains of Decca stations are in operation, one in Quebec, one in Nova Scotia, and two in Newfoundland. These stations give service to ships off Newfoundland and Nova Scotia, and in the St. Lawrence River and Gulf.

Radar is a valuable aid to marine navigation and it has become general practice to equip merchant ships with this device. Important buoys are fitted with radar reflectors to increase their radar visibility. Two shore-based radar installations are in operation—one at Camperdown near the mouth of Halifax Harbour and the other on the Lion's Gate Bridge across the entrance to Vancouver Harbour.

Lighthouses, particularly at locations where they would otherwise be completely cut off from summoning help in case of illness, are provided with low-powered transceivers for use in emergencies.

Aeronautical Navigation.—Radio aids to air navigation are provided from coast to coast and from the Canada-United States border to the Arctic along and off the airways, and are used by many Canadian and foreign air carriers flying over Canadian territory. Trained engineers and technicians are assigned to six regional offices located at Vancouver, B.C., Edmonton, Alta., Winnipeg, Man., Toronto, Ont., Montreal, Que., and Moncton, N.B., to carry out the construction and efficient operation of facilities.

The principal radio aid to air navigation provided by the Department of Transport is the low-frequency *radio range station*, located approximately every hundred miles along airways. It provides specific track guidance to pilots by means of audible signals and the signals may also be used for the purpose of obtaining direction finding bearings. In addition, radiotelephone communications are provided between ground and aircraft, by which means pilots may obtain weather data, air traffic control instructions and other information concerning the safety of flights.

Twenty very high frequency *omni-directional ranges* (VOR) are now in operation. Unlike the low-frequency radio range stations, this type of facility does not limit the aircraft using the station to one of four distinct courses but enables the pilot to select any desired course. The twenty omni-directional ranges have permitted the establishment of VOR airways west of Montreal and of thirteen trans-border airways. Eighteen additional installations are under construction and should be in operation by the autumn of 1960. Preliminary work has begun on seven others.

Aeronautical radiobeacon stations provide radio signals with which pilots may use their direction finding equipment to obtain relative directional bearings. *Fan markers*, operating on very high frequencies, are usually placed on an airway so as to inform the pilot when he may safely lose altitude after passing high terrain or to indicate accurately the distance from an airport. *Station location markers* are similar to fan markers except that the signal radiated is such that aircraft may receive the same indication irrespective of the

direction of flight. They are installed at the same location as a radio range to enable a pilot to determine when he is exactly over the station, thus obtaining definite indication of position. Station location markers are installed at most radio range sites.

Airport and airway surveillance radars (150 nautical-mile) are in operation at nine airports for air traffic control purposes. Of the six additional installations planned, five are expected to be operating before the end of 1960. A 50-mile-range surveillance radar at Gander forms part of a complete ground-controlled approach facility.

Instrument landing systems provide radio signals which, when received by special radio equipment aboard aircraft, permit pilots to approach airports for landing during periods of very low visibility. An installation normally consists of a localizer transmitter providing lateral guidance to the runway, a glide path transmitter for slope guidance to the approach end of the runway, two marker transmitters giving distance indications from the runway and a low-power radiobeacon (compass locator) to assist in holding procedures and lining up on the localizer course. The localizer and marker transmitters operate on very high frequencies, the glide path on ultra high frequencies and the compass locators on low and medium frequencies. Thirty-one instrument landing systems are in operation.

To assist in providing communication between aircraft and ground, *aeronautical radio communications stations* are located at strategic points across the country, including the Arctic. These stations, operating for the most part on high frequencies, provide communication with both domestic and international air carriers. The international communications stations form a major contribution on the part of Canada to international aviation. Their functions may be grouped as follows: (1) communication for meteorological services; (2) communication for the air traffic control services; and (3) communication for the benefit of the airline operating agencies with their aircraft and between their despatch offices.

Subsection 7.—Other Government, Miscellaneous and Commercial Radio Communication Services

Radio services have been established by all provincial governments, mainly for police, highway and forestry protection purposes.

Municipal government departments have steadily increased their use of radio to facilitate operations particularly as a medium of communication with vehicles—police, fire, engineering, hydro, etc. In addition, the trend toward expansion in the employment of radio for urban mobile communication has shown no signs of abating. Such services as taxi, heavy construction, ready-mix concrete, oil pipeline construction and operation, veterinarian and rural medical have participated extensively in this increase.

Public utilities, power companies, provincial power commissions, oil exploration and mineral development organizations have considerably expanded their use of radio in both urban mobile and point-to-point radio fields.

The member companies of the Telephone Association of Canada have established and are operating coast-to-coast microwave facilities to augment existing inter-city communication services and to provide television network service. This system has a number of trans-border (Canada-United States) inter-connections and is being continually modified and extended to provide better service. The railway companies also operate a number of large microwave radio systems to facilitate their inter-city communication services.

The Telephone Association members, independent telephone companies and the railways are increasingly extending communication service, by means of radio, to northern areas where such service was previously unavailable.

In addition, the telephone companies provide an extension of land telephone service, by radio, to suitably equipped vehicles. This service is available in all major cities in Canada and along many of the nation's arterial highways. Service of a similar nature is also provided by radio to land stations of subscribers in areas not served by normal wire telephone facilities. Restricted common-carrier mobile radio service (this service to

vehicles does not permit inter-connection with the over-all telephone system, but only with specific dispatchers) is now available in most major cities in Canada as well as in a number of areas of lesser population. This latter service is provided by telephone companies as well as other common-carrier organizations.

Subsection 8.—Radio and Television Broadcasting*

Broadcasting in Canada, as it has developed over a period of some forty years, is a combination of public and private enterprise. Under the Broadcasting Act, proclaimed Nov. 11, 1958, a Board of Broadcast Governors was created consisting of three full-time members and twelve part-time members. The Broadcasting Act provides that this Board is empowered 'for the purpose of ensuring the continued existence and efficient operation of a national broadcasting system and the provision of a varied and comprehensive broadcasting service of a high standard that is basically Canadian in content and character, to regulate the establishment and operation of networks of broadcasting stations, the activities of public and private broadcasting stations in Canada and the relationship between them, and provide for the final determination of all matters and questions in relation thereto'.

The Broadcasting Act also provides that the Minister of Transport must receive a recommendation from the Board of Broadcast Governors before dealing with any application for a licence to establish a broadcasting station or an application for an increase in power, change of channel or change of location of a broadcasting station, or before making any regulations or changes in the regulations under the Radio Act governing the activities of broadcasting stations.

As provided for in the Broadcasting Act, the Board of Broadcast Governors issued during 1959 the Radio Stations Broadcasting Regulations and the Radio (TV) Broadcasting Regulations. The enforcement of these Regulations is the responsibility of the Board.

Part II of the Broadcasting Act provides authority for the publicly owned Canadian Broadcasting Corporation. The Corporation, consisting of a President and a Vice-President and nine other directors appointed by the Governor in Council, is established 'for the purpose of operating a national broadcasting service'. The CBC is accountable to Parliament through a Cabinet Minister designated by the Governor in Council and is empowered to establish and maintain program networks and stations.

As of May 1, 1960, there were 29 CBC radio stations and 14 CBC television stations; 227 privately owned radio stations and 45 privately owned television stations. All the privately owned television stations and many of the privately owned radio stations are affiliated with the CBC and help to distribute national radio and television services over five networks operated by the CBC.

Radio Broadcasting Facilities.—The CBC operates three radio networks—the Trans-Canada and Dominion networks serving English-language audiences from the Atlantic to the Pacific, and the French-language network extending from Moncton, N.B., to Edmonton, Alta. As at Apr. 1, 1960, the Trans-Canada network was made up of 26 basic stations—13 CBC-owned and 13 privately owned. There were 28 supplementary stations, four of which were CBC-owned Newfoundland stations and seven of which were stations of the CBC Northern and Armed Forces Services. The Dominion network consisted of 31 basic stations of which 30 were privately owned. Nineteen supplementary privately owned stations also received Dominion network service. The French network had five basic stations, four of which were CBC-owned and one privately owned, and 20 privately owned supplementary stations.

* Prepared by the Information Services, Canadian Broadcasting Corporation, Ottawa.

Table 9 lists the broadcasting stations of the CBC radio networks.

9.—Broadcasting Stations of CBC Radio Networks, as at May 1, 1960

NOTE.—The stations marked with an asterisk (*) are CBC-owned. The symbols used in the Power column have the following meanings: D, daytime; N, night; DA-1, one directional antenna both day and night; DA-2, two directional antennae, one in daylight, the other at night; DA-N, single directional antenna used at night only. Wattage of some stations differs between day and night as shown.

Station Location	Frequency	Power	Station Location	Frequency	Power
	kc/s.	watts		kc/s.	watts
Trans-Canada Basic Network—			Dominion Basic Network—		
*CBI Sydney.....	1,140	5,000 DA-1	CJCB Sydney.....	1,270	5,000 D
*CBH Halifax.....	1,330	100			1,000 N
*CBA Sackville.....	1,070	50,000	CHNS Halifax.....	960	10,000 DA-N
CHSJ Saint John.....	1,150	5,000 DA-N	CJFX Antigonish.....	580	5,000 DA-1
CFNB Fredericton.....	550	50,000 DA-2	CJLS Yarmouth.....	1,340	250
*CBM Montreal.....	940	50,000	CFCY Charlottetown.....	630	5,000 DA-N
*CBO Ottawa.....	910	5,000 DA-1	CKCW Moncton.....	1,220	10,000 DA-N
CKWS Kingston.....	960	5,000 DA-1	CFBC Saint John.....	930	5,000 DA-1
*CBL Toronto.....	740	50,000	CKNB Campbellton.....	950	1,000 DA-1
CFCH North Bay.....	600	1,000 DA-1	CKTS Sherbrooke.....	900	1,000 DA-N
CJKL Kirkland Lake.....	560	5,000 DA-N	CFCF Montreal.....	600	5,000 DA-1
CKGB Timmins.....	680	5,000 DA-N	CKOY Ottawa.....	1,310	5,000 D
CKSO Sudbury.....	790	10,000 D			1,000 DA-N
		5,000 N DA-2	CHOV Pembroke.....	1,350	1,000 DA-1
*CBE Windsor.....	1,550	10,000 DA-1			1,000 DA-1
CJIC Sault Ste. Marie.....	1,050	250	CFJR Brockville.....	1,450	1,000 DA-D
CKPR Fort William.....	580	5,000 D			250 N
		1,000 N	CHEX Peterborough.....	980	5,000 DA-2
*CBW Winnipeg.....	990	50,000	*CJBC Toronto.....	860	50,000
*CBK Regina.....	540	50,000	CFPL London.....	980	10,000 D
*CBX Edmonton.....	1,010	50,000 DA-1			5,000 N DA-2
*CBXA Edmonton.....	740	250	CFCO Chatham.....	630	1,000 DA-1
CJOC Lethbridge.....	1,220	10,000 D	CFPA Port Arthur.....	1,230	1,000 D
		5,000 DA-N			250 N
CFJC Kamloops.....	910	10,000 D	CJRL Kenora.....	1,220	1,000
		1,000 N	CKRC Winnipeg.....	630	5,000 DA-N
CKOV Kelowna.....	630	1,000	CKX Brandon.....	1,150	5,000 D
CJAT Trail.....	610	1,000			1,000 N
*CBU Vancouver.....	690	10,000 DA-1	CJGX Yorkton.....	940	10,000 D
*CFPR Prince Rupert.....	1,240	250			1,000 N
			CKBI Prince Albert.....	900	10,000 DA-2
Trans-Canada Supplementary—			CFQC Saskatoon.....	600	5,000 DA-N
*CFGB Goose Bay.....	1,340	250	CHAB Moose Jaw.....	800	10,000 D
*CBN St. John's.....	640	10,000			5,000 N DA-N
*CBY Corner Brook.....	790	1,000	CKRM Regina.....	980	5,000 DA-N
*CBG Gander.....	1,450	250	CFRN Edmonton.....	1,260	10,000 DA-N
*CBT Grand Falls.....	990	1,000	CFCN Calgary.....	1,060	10,000 DA-N
CKEC New Glasgow.....	1,320	1,000 D	CHWK Chilliwack.....	1,270	10,000 DA-1
		250 N	CJOR Vancouver.....	600	5,000 DA-1
CKBW Bridgewater.....	1,000	1,000 DA-N	CJVI Victoria.....	900	10,000 DA-1
CKMR Newcastle.....	790	1,000 DA-1	Dominion Supplementary—		
CKBC Bathurst.....	1,400	250	CHML Hamilton.....	900	5,000 DA-1
CJQC Quebec.....	1,340	250	CKTB St. Catharines.....	610	5,000 DA-1
CKOC Hamilton.....	1,150	5,000 DA-2	CFOR Orillia.....	1,560	10,000 D
CHLO St. Thomas.....	680	1,000 DA-1			1,000 N
CHOK Sarnia.....	1,070	5,000 D	CHNO Sudbury.....	900	1,000 DA-N
		1,000 DA-N	CHAT Medicine Hat.....	1,270	1,000 DA-1
CJNR Blind River.....	730	1,000 DA-N	CJIB Vernon.....	940	1,000
CFAR Flin Flon.....	590	1,000	CFOB Fort Frances.....	800	1,000 D
*CHFC Fort Churchill.....	1,230	250			500 N
*CFYT Dawson.....	1,230	100	CKCV Quebec.....	1,280	5,000 DA-1
*CFYK Yellowknife.....	1,340	150	CJSS Cornwall.....	1,220	1,000 DA-2
*CBXH Fort Smith.....	860	40	CJQB Belleville.....	500	1,000 DA-1
*CFHR Hay River.....	1,490	40	CKCR Kitchener.....	1,490	250
*CFWH Whitehorse.....	1,240	250	CJCS Stratford.....	1,240	250
CFGP Grande Prairie.....	1,050	10,000 DA-1	CKPC Brantford.....	1,380	1,000 DA-N
CKLN Nelson.....	1,390	1,000 DA-1	CKNX Wingham.....	920	2,500 D
CKPG Prince George.....	550	250			1,000 N DA-2
CJDC Dawson Creek.....	1,350	1,000	CFOS Owen Sound.....	560	1,000 DA-2
CJCA Edmonton.....	930	10,000 D	CKLW Windsor.....	800	50,000 DA-2
		5,000 N DA-N	CKRD Red Deer.....	850	1,000 DA-1
CKCK Regina.....	620	5,000 DA-N	CKLC Kingston.....	1,380	5,000 DA-2
CFAC Calgary.....	960	10,000 DA-N	CKOK Penticton.....	800	10,000 D
					500 N

9.—Broadcasting Stations of CBC Radio Networks, as at May 1, 1960—concluded

Station Location	Frequency	Power	Station Location	Frequency	Power
	kc/s.	watts		kc/s.	watts
French Basic Network—			French Supplementary—		
*CBJ Chicoutimi.....	1,580	10,000 DA-1	concluded		
*CBV Quebec.....	980	5,000 DA-1	CKVD Val d'Or.....	1,230	250
*CBF Montreal.....	690	50,000	CHAD Amos.....	1,340	250
*CBAF Moncton.....	1,300	5,000 DA-1	CKRN Rouyn.....	1,400	250
CHNC New Carlisle.....	610	5,000 DA-1	CKLS La Sarre.....	1,240	250
			CKLD Thetford Mines.....	1,230	250
			CFCL Timmins.....	620	10,000 D
French Supplementary—					5,000 N DA-2
CJEM Edmundston.....	570	1,000 DA-N	CKSB St. Boniface.....	1,050	10,000 DA-N
CJBR Rimouski.....	900	10,000 DA-N	CHFA Edmonton.....	680	5,000 DA-1
CHLT Sherbrooke.....	630	10,000 D	CFNS Saskatoon.....	1,170	1,000 DA-1
		5,000 N DA-2	CFRG Gravelbourg.....	710	5,000 D
CHGB Ste. Anne de la				1,230	250 N
Pocatière.....	1,350	1,000 D	CFBR Sudbury.....	550	1,000 D
		250 N	CKBL Matane.....	1,250	5,000 DA-1
CKCH Hull.....	970	5,000 DA-1	CKVM Ville Marie.....	710	1,000 DA-N
CJFP Rivière du Loup..	1,400	1,000 D	CKRB Ville St. Georges..	1,250	5,000 D
		250 N			1,000 N DA-N

CBC Northern Radio Service.—Since November 1958 six radio stations in Northern Canada have been taken over by the CBC—at Whitehorse and Dawson in the Yukon Territory, Yellowknife and Hay River in the Northwest Territories, Goose Bay in Labrador* and Fort Churchill in northern Manitoba. A seventh was built at Fort Smith and another is being constructed at Inuvik, both in the Northwest Territories. Low-power relay transmitters were installed at Fort Nelson, B.C., and Watson Lake, Y.T.

Whitehorse is linked by landline to Edmonton for network programs. Other northern stations are able to pick up and relay news and topical programs from CBC transmitters at Lacombe, Alta., Watrous, Sask., and Sackville, N.B. Greater use of facilities at Sackville during the summer of 1960 will result in the transmission of programs more extensively to the North.

Network features are provided for all stations on tapes recorded in Montreal and flown to the North on regular airline flights. The stations are staffed with local recruits wherever possible and the CBC Northern Service works closely with the educational service of the Department of Northern Affairs and National Resources.

10.—CBC Radio Stations in Northern Canada

Station Location	Frequency	Power	Date of Start of CBC Operation
	kc/s.	watts	
CFWH Whitehorse, Y.T.....	1240	250	Nov. 10, 1958
CFYT Dawson, Y.T.....	1230	100	Nov. 13, 1958
CFYK Yellowknife, N.W.T.....	1340	150	Dec. 13, 1958
CFGB Goose Bay, Labrador.....	1340	250	Feb. 23, 1959
CBXH Fort Smith, N.W.T.....	860	40	May 29, 1959
CFHR Hay River, N.W.T.....	1490	40	Sept. 7, 1959
CHTC Fort Churchill, Man.....	1230	250	Sept. 13, 1959
*CBXF Fort Nelson, B.C.....	860	40	Oct. 9, 1959
*CBXG Watson Lake, Y.T.....	860	40	Oct. 11, 1959
CHAK Inuvik, N.W.T.....	860	1,000	August 1960

* Low-power relay transmitters.

FM Radio.—With the opening of the three-city CBC-FM network on Apr. 4, 1960, a new bilingual aspect entered Canadian network radio. The network is bilingual in the sense that each station in Toronto, Ottawa and Montreal announces the programs it originates in English or French, without translation into the other language. At the start of each day's programming, however, a program résumé is given in both English and French.

The schedule planners have placed emphasis on the best of the world's music, both popular and classical, live and recorded. CBC news, talks and commentaries in depth and great dramatic works in English and French are also presented.

For the first 18 months of its operation, the frequency modulation network will be experimental in nature. The network broadcasts during the evening hours from 7 p.m. to midnight, Monday to Friday, and from noon to midnight on Saturday and Sunday. The network links three existing CBC stations—CBC-FM in Toronto, CBM-FM in Montreal, and CBO-FM in Ottawa.

11.—CBC-FM Stations

Call Letters	Frequency	Power	Location
	mc/s.	kw.	
FM Network—			
CBC-FM.....	99.1	11.90	Toronto, Ont.
CBM-FM.....	100.7	3.86	Montreal, Que.
CBO-FM.....	103.3	0.38	Ottawa, Ont.
French—			
CBF-FM.....	95.1	3.86	Montreal, Que.
Other—			
CBU-FM.....	105.7	1.40	Vancouver, B.C.

Television Broadcasting Facilities.—As of May 1, 1960, there were 59 television stations in Canada, plus 15 satellite or network relay stations. There were 35 basic television stations in operation on the English network, 10 of which were CBC-owned. On the French network, 12 stations were in operation, four of which were CBC-owned. The CBC and affiliated stations, plus supplementary stations and satellites, were located and powered as follows:—

12.—Broadcasting Facilities of CBC Television Networks, as at May 1, 1960

NOTE.—Asterisks denote satellite stations.

Station and Location	Chan- nel	Effective Radiated Power ¹		Station and Location	Chan- nel	Effective Radiated Power ¹	
		Video	Audio			Video	Audio
		watts	watts			watts	watts
English Network—				English Network—continued			
CBC—				Affiliates—concluded			
CBYT Corner Brook, Nfld.....	5	197	98	CKCW-TV Moncton, N.B.....	2	25,000	15,000
CBHT Halifax, N.S.....	3	100,000	60,000	CHSX-TV Saint John, N.B.....	4	100,000	50,000
*CBHT-1 Liverpool, N.S.....	12	412	248	CHEX-TV Peterborough, Ont.....	12	260,000	156,000
*CBHT-2 Shelburne, N.S.....	8	412	248	CKWS-TV Kingston, Ont.....	11	257,000	154,000
*CBHT-3 Yarmouth, N.S.....	11	412	248	CHCH-TV Hamilton, Ont.....	11	150,000	90,000
CBLT Toronto, Ont.....	6	99,500	53,500	CKCO-TV Kitchener, Ont.....	13	100,000	54,500
CBOT Ottawa, Ont.....	4	50,100	26,700	CFPL-TV London, Ont.....	10	325,000	195,000
CBMT Montreal, Que.....	6	43,800	26,200	CKNX-TV Wingham, Ont.....	8	160,000	100,000
CBWT Winnipeg, Man.....	3	57,800	34,700	CKLV-TV Windsor, Ont.....	9	325,000	180,000
CBUT Vancouver, B.C.....	2	89,400	47,800	CKVR-TV Barrie, Ont.....	3	100,000	50,000
CBWAT Kenora, Ont.....	8	493	247	CKGN-TV North Bay, Ont.....	10	51,500	25,750
CFSN-TV Stephenville, Nfld.....	8	490	245	CKSO-TV Sudbury, Ont.....	5	30,000	16,000
CFLA-TV Goose Bay, Labrador.....	8	348	174	*CKSO-TV-1 Elliot Lake, Ont.....	3	4,000	2,000
				CFCL-TV Timmins, Ont.....	6	18,500	9,250
Affiliates—				*CFCL-TV-1 Kapuskasing, Ont.....	3	46	21
CJON-TV St. John's, Nfld.....	6	21,040	11,000	*CFCL-TV-2 Elk Lake, Ont.....	2	3,520	1,760
*CJOX-TV Argentina, Nfld.....	10	460	230	CJIC-TV Sault Ste. Marie, Ont.....	2	28,000	15,000
CFCY-TV Charlottetown, P.E.I.....	13	79,000	39,500	CFCJ-TV Port Arthur, Ont.....	2	28,000	15,000
*CFCY-TV-1 New Glasgow, N.S.....	7	209	104	CKX-TV Brandon, Man.....	5	19,300	8,650
CJCB-TV Sydney, N.S.....	4	180,000	108,000	CKCK-TV Regina, Sask.....	2	100,000	53,500
*CJCB-TV-1 Inverness, N.S.....	6	6,000	3,200	CFQC-TV Saskatoon, Sask.....	8	325,000	180,000
				CHCT-TV Calgary, Alta.....	2	100,000	50,000
				CFRN-TV Edmonton, Alta.....	3	180,300	90,400
				CJLH-TV Lethbridge, Alta.....	7	171,000	85,500
				CHEK-TV Victoria, B.C.....	6	1,800	900

¹ Based on stations' published data.

12.—Broadcasting Facilities of CBC Television Networks, as at May 1, 1960—concluded

Station and Location	Chan- nel	Effective Radiated Power ¹		Station and Location	Chan- nel	Effective Radiated Power ¹			
		Video	Audio			Video	Audio		
		watts	watts			watts	watts		
English Network—concluded				French Network—					
Supplementary Stations—				CBC—					
CJCN-TV	Grand Falls, Nfld	4	7,300	3,600	CBAFT	Moncton, N.B....	11	600	324
CJSS-TV	Cornwall, Ont....	8	260,000	130,000	CBOFT	Ottawa, Ont....	9	55,000	31,000
CKMI-TV	Quebec, Que.....	5	5,600	2,800	CBFT	Montreal, Que....	2	100,000	50,000
CKRN-TV	Rouyn, Que.....	4	50,000	25,000	CBWFT	Winnipeg, Man....	6	2,870	1,720
CHAB-TV	Moose Jaw, Sask..	4	100,000	53,000					
CKBI-TV	Prince Albert, Sask.....	5	100,000	61,000	Affiliates—				
CJFB-TV	Swift Current, Sask.....	5	13,300	6,650	CHLT-TV	Sherbrooke, Que.	7	300,000	186,000
CKOS-TV	Yorkton, Sask....	3	5,000	2,500	CKTM-TV	Trois-Rivières, Que.....	13	6,500	3,250
*CKOS-TV-1	Baldy Mountain, Man.....	8	9,500	4,750	CFCM-TV	Quebec, Que.....	4	12,700	6,350
CHAT-TV	Medicine Hat, Alta.....	6	5,700	3,000	CKRS-TV	Jonquière, Que....	12	42,000	21,000
CHCA-TV	Red Deer, Alta...	6	13,000	6,500	CJBR-TV	Rimouski, Que....	3	100,000	50,000
CJDC-TV	Dawson Creek, B.C.....	5	200	85	*CJES-TV-1	Estcourt, Que....	70	45.1	22.5
CFCR-TV...	Kamloops, B.C....	4	700	350	*CFCV-TV-1	Clermont, Que....	75	65.9	32.9
CHBC-TV	Kelowna, B.C....	2	3,700	1,600	CKBL-TV	Matane, Que.....	9	280,000	170,000
*CHBC-TV-1	Penticton, B.C....	13	540	270	CKRN-TV	Rouyn, Que.....	4	50,000	25,000
*CHBC-TV-2	Vernon, B.C.....	7	620	310	CHAU-TV	New Carlisle, Que.....	5	100,000	52,000
*CHGP-TV-1	Princeton, B.C....	72	39.2	19.6	Supplementary Stations—				
					CFCL-TV	Timmins, Ont....	6	18,500	9,250 *
					*CFCL-TV-1	Kapuskasing, Ont	3	46	21
					*CFCL-TV-2	Elk Lake, Ont....	2	3,250	1,760
					CJSS-TV	Cornwall, Ont....	8	260,000	130,000

¹Based on stations' published data.

It was estimated at the end of March 1960 that 87 p.c. of Canada's population was within range of Canadian television programs. Microwave facilities linking television stations from coast to coast for instantaneous telecasting of programs went into full operation July 1, 1958. In June 1959 these facilities were extended from Sydney, N.S., to St. John's, Nfld., providing a direct visual link between all ten provinces. When television broadcasting began in September 1952, television sets in use in Canada totalled 146,000. One year later the number had tripled and by March 1960 it was estimated that programs of the CBC networks could be viewed in approximately 3,400,000 Canadian homes.

Canadian Broadcasting Corporation Service.—The Corporation's Head Office is located at Ottawa and provides over-all direction for the English and French language television and radio services through the CBC's nine operating divisions: British Columbia; Prairie, Quebec and French networks; Ottawa Area; Maritimes; Newfoundland; Northern and Armed Forces Services; and the International Service. To give expression to varying interests across Canada, the CBC maintains offices and production facilities at St. John's and Corner Brook, Nfld., Sydney and Halifax, N.S., Moncton, N.B., Chicoutimi, Quebec City and Montreal, Que., Ottawa, Toronto and Windsor, Ont., Winnipeg, Man., Regina, Sask., Edmonton, Alta., and Vancouver and Prince Rupert, B.C.

Domestic Radio Program Service.—During the year ended Mar. 31, 1959, about 1,500 programs representing 495 hours of broadcasting were presented each week over the CBC's Trans-Canada, Dominion and French networks. Of the total broadcasting hours in 1958-59, 71 p.c. were released on the Trans-Canada network; the Dominion network released 6 p.c. and 23 p.c. were carried on the French network.

The CBC originated and produced 94 p.c. of its network broadcasts. Of the remainder, 1 p.c. came from the private stations, 1 p.c. were exchange programs from the United States, 2 p.c. from the United Kingdom, and 2 p.c. came from other countries. An analysis of network programs by categories for 1958-59 shows that a large proportion of CBC radio network time was devoted to music—an estimated 38 p.c.; 57 p.c. of programs were pre-

dominantly entertainment (music, drama, sports, etc.); 26 p.c. were predominantly information programs (news and weather, farm and fisheries, science, nature, etc.); and 17 p.c. were predominantly idea or opinion programs.

13.—Hours of English and French Radio Network Programming, by Category

NOTE.—Estimated on basis of sample weeks: English Networks Mar. 1-7, 1959; French Networks, Apr. 19-25, 1959.

Category	Hours per Week	Distribution of Hours	Category	Hours per Week	Distribution of Hours
	No.	p.c.		No.	p.c.
Music, serious.....	54	11	Sports.....	15	3
Music, other.....	133	27	School and youth education.....	20	4
News and weather.....	69	14	Political and controversial.....	10	2
Miscellaneous entertainment.....	49	10	Miscellaneous information.....	15	3
Drama.....	30	6	Other countries.....	5	1
Farm and fisheries.....	25	5	Social and human relations.....	5	1
Canadian ideas and heritage.....	25	5	Science and nature.....	5	1
Religious.....	20	4	Other.....	5	1
Home and hobby.....	10	2			
			Totals.....	495	100

Domestic Television Program Service.—During the year ended Mar. 31, 1959, the CBC English-language television network presented 59 hours per week of programs. Of this, 59 p.c. was produced by CBC; 36 p.c. was drawn from sources in the United States; 2 p.c. from other Canadian sources; 1 p.c. from the United Kingdom; and 2 p.c. from other countries. Of the 70 hours presented each week on the French network, 66 p.c. originated with the CBC; 3 p.c. with other Canadian sources; 18 p.c. with sources in France; 4 p.c. in the United States; 2 p.c. in the United Kingdom; and 7 p.c. in other countries.

14.—Hours of English and French Television Network Programming, by Category

NOTE.—Estimated on basis of sample weeks: English Network, Mar. 1-7, 1959; French Network, Apr. 19-25, 1959.

Category	Hours per Week	Distribution of Hours	Category	Hours per Week	Distribution of Hours
	No.	p.c.		No.	p.c.
Drama.....	51	40	Religious.....	4	3
Variety and other entertainment.....	22	17	Science and nature.....	4	3
Sports.....	10	8	School and youth education.....	1	1
News and weather.....	8	6	Political and controversial.....	3	2
Canadian ideas and heritage.....	3	2	Home and hobby.....	4	3
Music.....	5	4	Farm and fisheries.....	1	1
Other countries.....	5	4	Other.....	3	2
Miscellaneous information.....	5	4			
			Totals.....	129	100

CBC International Service.—The International Service of the Canadian Broadcasting Corporation broadcasts news, news reports, commentaries, interviews, talks, accounts of special events, actualities, and other programs that tell people in other lands about life in Canada. The headquarters and studios are in the Radio-Canada Building in Montreal and the two 50-kw. shortwave transmitters and antenna arrays are in Sackville, New Brunswick. The programs are transmitted directly by shortwave to listeners in sixteen languages—English, French, German, Dutch, Italian, Danish, Norwegian, Swedish, Czech, Slovak, Russian, Ukrainian, Polish, Hungarian, Spanish and Portuguese. A recorded program service is provided regularly to radio organizations in Austria, Finland and Greece. As required, all radio organizations throughout the world are provided with special relays and recorded programs.

The International Service also provides a Transcription Service to radio organizations in other countries. This consists of music and spoken-word recordings on long-playing discs. The music transcriptions feature the works of Canadian composers, performers, arrangers, conductors and orchestras. The spoken-word transcriptions, in the English, French and Spanish languages, include programs that deal with Canadian drama, history, biography, folklore, documentaries and literature.

In addition to their use for the regular programs of the International Service, the shortwave transmitters at Sackville are employed to provide programs for people living in Canada's Far North and for relay to the members of Canada's Armed Forces stationed abroad. On special occasions, the regular facilities of the International Service are supplemented by commercial radio-telephone facilities to provide simultaneous service to areas of the world beyond the range of the signal from Sackville.

More than 400,000 letters, cards and reception reports have been received from listeners since the official inauguration of the International Service on Feb. 25, 1945. Replies are sent in the language of the letter-writer and a great variety of printed and illustrated information on all aspects of life in Canada is provided. An illustrated Program Schedule is distributed periodically to some 200,000 listeners around the world.

In addition to its international shortwave service, the CBC maintains two domestic shortwave stations—CBNX at St. John's, Nfld., and CBUX at Vancouver, B.C.—for the purpose of extending coverage of the existing standard band stations CBN and CBU.

Canadian Broadcasting Corporation Finances.—Table 15 is a statement of CBC finances for the year ended Mar. 31, 1959. During that year the Corporation supplemented its income from the public treasury by a record \$32,093,505 from commercial revenue. The development of the national television service and general price rises continued to make heavy demands on increased revenues.

15.—Financial Statement of the CBC, Year Ended Mar. 31, 1959

Item	Amount
	\$
Income—	
Commercial revenue.....	32,093,505
Broadcasting licence fees.....	459,450
Interest on investments.....	149,776
Miscellaneous.....	491,791
Total, Income.....	33,194,522
Expenses—	
Programs.....	47,120,661
Engineering.....	13,291,340
Network distribution.....	8,358,511
Northern radio service.....	149,180
Commissions to agencies and networks.....	5,630,679
Payments to private stations.....	4,703,677
Administrative.....	2,396,537
Commercial.....	1,016,155
Information services.....	1,560,116
Interest on loans.....	564,231
Provision for depreciation.....	2,523,466
Total, Expenses.....	87,314,553¹
Excess of Expenses over Income.....	54,120,031
Recoverable by way of:—	
Parliamentary grant toward the net operating requirements of the radio and television services..	41,790,117
Parliamentary grant under Section 14(4) of the Canadian Broadcasting Act.....	9,806,448
	51,596,565
Proprietor's Equity Account—re depreciation.....	2,523,466
	54,120,031

¹ Included are \$57,000 for executive officers' remuneration, \$14,400 for honoraria to directors and \$33,600 for legal expenses.

Privately Owned Stations.—As already stated, privately owned broadcasting stations are subject to the Radio Act, the Canadian Broadcasting Act and Regulations made thereunder, and the provisions of the Radio Regulations annexed to the International Telecommunication Convention and Regional Agreements in effect in Canada. Since Mar. 31, 1923, private commercial broadcasting station licences have been required by government regulation and both sound and television broadcasting stations are now authorized by this class of licence.

Any application for a licence to establish a new private station or for an increase in power, change of channel, or change of location of any existing private station must be referred by the Minister of Transport to the Board of Broadcast Governors; the Board, after giving public notice thereof in the *Canada Gazette*, will make such recommendations to the Minister of Transport as it may deem fit. The approval of the Governor in Council must be obtained before any licence for a new private station is issued. Private commercial broadcasting station licences are conditional upon the ownership or control of the stations, and none of the shares of capital stock of licensed private companies nor the control of licensed public companies may be changed without the permission of the Minister of Transport having been first obtained upon the recommendation of the Board of Broadcast Governors. The Radio Stations Broadcasting Regulations require all broadcasting stations to present to the Board at the end of each week a program log for that week indicating the total programming carried by the station. Organizational and financial statements are filed annually, on a confidential basis, with the Department of Transport.

The first sound broadcasting in Canada took place when a privately owned communications company in Montreal was authorized to transmit programs on an experimental basis during the latter part of 1918 and in the winter evenings of 1919 over its Station XWA. Under the first licensing regulations in the year ended Mar. 31, 1923, 34 licences were issued. By Mar. 31, 1960, the number had increased to 258, of which 221 were AM standard band stations, 29 were frequency modulated stations and eight were shortwave stations. Of the 221 standard band stations, 15 were operating with a power of 50,000 watts, 46 with 10,000 watts, 44 with 5,000 watts, one with 2,500 watts, 72 with 1,000 watts, one with 500 watts, 40 with 250 watts, one with 150 watts and four with 100 watts.

A privately owned broadcasting station is required to pay to the Receiver General of Canada an annual licence fee based on the gross revenue for licence fee computation for the fiscal year of the station. Because the fiscal years of the privately owned stations end at different dates, it is difficult to estimate the gross revenue of all stations for any one year. The Report of the Royal Commission on Broadcasting published in 1957 indicates that gross sales for 144 broadcasting stations amounted to approximately \$36,000,000 in 1955, all of which was obtained from commercial advertising.

The first privately owned television broadcasting station in Canada located at Sudbury, Ont., was authorized to commence scheduled broadcasting on Oct. 20, 1953. By May 1, 1960, 45 privately owned television stations were in operation (see Table 12).

Section 2.—The Post Office

The Canada Post Office Department was created at the time of Confederation in 1867 by the Canada Post Office Act to superintend and manage the postal service of Canada under the direction of a Postmaster General. For almost a century before Confederation, postal services in the Canadian provinces had been controlled by the British Postmaster General and administered by his deputies. Under the French régime a courier service had been organized as early as 1703 between Quebec, Trois Rivières and Montreal. In 1734 a post road was constructed over the same route and post houses, complete with post horses and vehicles, were established for the use of travellers. In 1851 the control of their post offices was assumed by the different provinces of British North America and at Confederation these systems merged to form the Canada Post Office.

Functions.—The basic tasks of the Canadian Postal Service are to receive, convey and deliver postal matter with security and dispatch. In discharging these duties it maintains post offices and utilizes air, railway, land and water transportation facilities. Associated functions include the sale of stamps and other articles of postage, the registration of letters and other mail for dispatch, the insuring of parcels, the accounting for COD articles, and the transaction of money order and Post Office Savings Bank business. Because of its widespread facilities, it has been found expedient for the Post Office to assist other government departments in the performance of certain tasks including the sale of unemployment insurance stamps, the collection of government annuity payments, the distribution of income tax forms and Civil Service employment application forms, and the display of government posters.

Post offices are established wherever the population warrants. Those in rural areas and small urban centres transact all of the functions of the city office. In larger urban areas postal stations and sub-post offices have full functions similar to the main post office, including a general delivery service, lock-box delivery and letter-carrier delivery.

At Mar. 31, 1959, there were 11,634 post offices in operation compared with 11,768 in 1958. Letter-carrier delivery, performed in 152 urban centres, employed over 6,690 uniformed letter carriers. Postage paid in 1958-59 by means of postage stamps amounted to \$82,008,654 as compared with \$81,192,007 in 1958. Post office money orders, issued for any amount not exceeding \$100 and payable in almost any country of the world, were sold at more than 8,000 post offices and money orders payable in Canada only, for amounts not exceeding \$16, were sold at some 2,800 additional post offices. Post Office Savings Banks operate in all parts of the country and, on Mar. 31, 1959, had total deposits of \$34,155,617.

Organization.—The Canada Post Office includes an Operating Service and Headquarters at Ottawa. The Operating Service is organized into four regions, each under a Regional Director who is the field representative of the Deputy Postmaster General. There are seven Headquarters Branches: Administration, Operations, Transportation, Comptroller's Branch, Engineering and Development, Financial, and Personnel—each under a Director. Operating and secretarial features in the operating field affecting the post offices and local mail services in urban centres are taken care of by the local postmaster. District office functions relating to services in the district and all inspections and investigations are under District Directors of Postal Services in strategic centres across the country.

Postal service is provided in Canada from Newfoundland to the west coast of Vancouver Island and from Pelee Island, Ont. (the most southerly inhabited point of Canada) to settlements and missions far into the Arctic. Canada's airmail system provides several transcontinental flights daily and constitutes a great air artery from St. John's, Nfld., to Victoria, B.C., intersected by branch lines and connecting lines radiating to every quarter and linking up with the United States airmail system. Since July 1, 1948, all first class domestic mail up to and including one ounce in weight has been carried by air between one Canadian point and another, whenever delivery can thus be expedited. On Apr. 1, 1954, this service was extended to first class items up to and including eight ounces in weight. Air stage service provides the only means of communication for many areas in the hinterland. There were approximately 39,633 miles of airmail and air stage routes in Canada in 1959 as compared with 38,334 miles in 1958.

The principal means of mail transportation is the railway mail service that operates along about 26,530 miles of track and, in 1959, covered over 37,525,000 service-miles. A staff of 792 mail clerks prepared the mails for prompt delivery and dispatch while en route in the railway mail cars.

The rural mail delivery organization provided direct postal service over approximately 5,521 rural mail routes in 1959, extending over 135,000 route-miles and serving 494,865 rural mail boxes. Rural mail routes are generally circular in pattern and average about 24.9 miles in length. Considerable progress has been made towards the development of mail service by means of group boxes—a service intended for the more densely populated rural areas and for suburban residents not within the area of letter-carrier

delivery service. About 2,927 side services were in operation in 1959 to transport mail between post offices, railway stations, steamer wharves and airports, and 2,090 stage services operated to convey mail to and from post offices not located on railway lines. Transportation of mail by motor vehicle on highways is being developed and over 331 such services are in operation, many of them replacing or reducing conveyance by rail. A local exchange of mails between offices on the route is effected by way-mail wallet. In 1959 there were approximately 806 city mail services transporting mail to and from post offices, postal stations and sub-post offices, collecting mail from street letter-boxes and delivering parcel post. The 10,538 land-mail service couriers employed travelled approximately 50,000,000 miles during the year. Land-mail services are performed under a contract system, the contracts being awarded to the person submitting the lowest tender and competent to provide all the requisite equipment.

Coastal mail service is conducted by 28 contractors who operate as far north along the West Coast as Alaska and on the East Coast to the northern part of Labrador.

Post Office Statistics.—Tables 16, 17 and 18 give the numbers of post offices in operation together with revenue and expenditure for recent years.

16.—Post Offices in Operation, by Province, as at Mar. 31, 1956-59

Province or Territory	1956	1957	1958	1959
	No.	No.	No.	No.
Newfoundland.....	636	640	641	647
Prince Edward Island.....	105	105	105	104
Nova Scotia.....	1,124	1,117	1,096	1,081
New Brunswick.....	736	703	676	634
Quebec.....	2,463	2,435	2,413	2,405
Ontario.....	2,644	2,627	2,616	2,624
Manitoba.....	815	817	810	814
Saskatchewan.....	1,332	1,318	1,310	1,298
Alberta.....	1,141	1,124	1,112	1,089
British Columbia.....	947	940	937	932
Yukon Territory.....	16	16	16	19
Northwest Territories.....	37	37	36	37
Canada.....	11,996	11,879	11,768	11,634

The increase in postal business is one of the impressive features of Canada's economic development during the past ten years. Gross revenue for the year ended Mar. 31, 1959 reached an all-time high.

17.—Revenue and Expenditure of the Post Office Department, Years Ended Mar. 31, 1950-59

NOTE.—Figures from 1868 will be found in the corresponding table of previous Year Books beginning with the 1911 edition.

Year	Gross Revenue	Net Revenue ¹	Expenditure ²	Surplus (+) or Deficit (-)
	\$	\$	\$	\$
1950.....	101,277,435	84,528,655	82,639,741	+1,888,914
1951.....	105,545,456	90,454,678	91,731,466	-1,276,788
1952.....	122,266,675	104,622,208	97,973,263	+6,648,945
1953.....	129,388,365	112,024,245	105,553,191	+6,471,054
1954.....	129,889,325	111,107,484	113,581,752	-2,474,268
1955.....	151,717,273	131,315,049	123,611,055	+7,703,994
1956.....	158,568,356	137,696,621	127,421,739	+10,274,882
1957.....	167,879,869	145,823,785	139,992,921	+5,830,864
1958.....	177,492,783	152,919,881	153,319,782	-399,901
1959.....	183,380,508	157,630,336	157,803,478	-173,142

¹ Gross revenue less commissions and allowances to postmasters, and other smaller items.
rental of service staff and staff post offices.

² Excludes

The gross revenue receipts shown in Table 17 are received mainly from postage, either in the form of postage stamps and stamped stationery, or postage meter and postage register machine impressions. Some postage is also paid in cash without stamps, stamped stationery or meter and register impressions. The gross value of the postage stamps and stamped stationery sold during each of the latest five fiscal years was: \$74,583,720 in 1954-55, \$75,559,106 in 1955-56, \$77,735,659 in 1956-57, \$81,192,007 in 1957-58 and \$82,008,654 in 1958-59. Receipts from postage meter or postage register impressions and postage paid in cash by other means were as follows: \$65,516,441 in 1954-55, \$70,696,501 in 1955-56, \$78,041,479 in 1956-57, \$83,706,744 in 1957-58 and \$87,920,080 in 1958-59.

18.—Gross Postal Revenue of Post Offices Collecting Upwards of \$10,000, Year Ended Mar. 31, 1959

NOTE.—Money order commissions are not included in gross postal revenue. Provincial totals of postal revenue include post offices not separately listed.

Province and Post Office	1959	Province and Post Office	1959
	\$		\$
Newfoundland	1,676,104	Nova Scotia—concluded	
Botwood.....	13,326	Springhill.....	26,815
Carbonear.....	10,889	Stellarton.....	31,276
Chanel.....	12,369	Sydney.....	298,939
Corner Brook.....	117,052	Sydney Mines.....	24,591
Deer Lake.....	12,287	Tatamagouche.....	11,537 ^a
Gander.....	41,989	Trenton.....	10,431
Goose Airport.....	27,858	Truro.....	190,293
Goose Airport Sub-office A.....	14,179	Westville.....	12,367
Grand Falls.....	42,922	Weymouth.....	11,440
Lewisporte.....	14,177	Windsor.....	45,083
St. John's.....	780,532	Wolfville.....	34,406
Stephenville.....	25,778	Yarmouth.....	104,100
Wabana.....	18,064		
Windsor.....	12,183	New Brunswick	4,094,629
Prince Edward Island	496,882	Bathurst.....	84,316
Charlottetown.....	257,523	Campbellton.....	74,421
Kensington.....	10,304	Chatham.....	38,800
Montague.....	13,862	Chipman.....	11,425
Souris East.....	10,364	Dalhousie.....	31,601
Summerside.....	71,273	Edmundston.....	68,760
		Fredericton.....	437,147
Nova Scotia	5,135,796	Grand Falls.....	27,487
Amherst.....	103,506	Hartland.....	13,667
Annapolis Royal.....	17,509	Harvey Station.....	10,398
Antigonish.....	70,583	Minto.....	12,126
Baddeck.....	13,819	Moncton.....	1,412,945
Bedford.....	19,892	Newcastle.....	52,579
Berwick.....	15,133	Oromocto.....	21,829
Bridgetown.....	18,367	Perth.....	10,746
Bridgewater.....	67,718	Plaster Rock.....	11,841
Chester.....	12,633	Richibucto.....	11,163
Cornwallis.....	17,043	Rothessay.....	10,258
Digby.....	37,283	Saint John.....	896,202
Glace Bay.....	74,169	St. Andrews.....	24,785
Halifax.....	2,608,074	St. George.....	10,052
Halifax Fleet Mail Office.....	23,461	St. Stephen.....	45,132
Hantsport.....	11,857	Sackville.....	59,173
Inverness.....	10,839	Shediac.....	15,994
Kentville.....	92,920	Sussex.....	37,624
Kingston.....	13,411	Tracadie.....	12,061
Liverpool.....	49,589	Woodstock.....	57,970
Lunenburg.....	31,884		
Mahone Bay.....	12,430	Quebec	39,714,365
Middleton.....	31,234	Acton Vale.....	18,786
New Glasgow.....	120,254	Alma.....	64,376
New Waterford.....	31,058	Amos.....	56,232
North Sydney.....	45,687	Amqui.....	27,979
Oxford.....	10,187	Arthabaska.....	12,327
Parrsboro.....	13,393	Arvida.....	63,091
Pictou.....	32,689	Asbestos.....	42,335
Rockingham Station.....	10,606	Aylmer East.....	13,279
RCAF Station, Greenwood.....	15,286	Bagotville.....	16,200
Shearwater.....	11,971	Baie Comeau.....	55,909
Shelburne.....	25,489	Baie St. Paul.....	14,349
Shubenacadie.....	12,616	Barraute.....	10,937
		Basilique Ste. Anne.....	72,250

18.—Gross Postal Revenue of Post Offices Collecting Upwards of \$10,000, Year Ended
Mar. 31, 1959—continued

Province and Post Office	1959	Province and Post Office	1959
	\$		\$
Quebec—continued		Quebec—concluded	
Beauceville East.....	21,068	Neuveville.....	29,424
Beauharnois.....	39,625	New Carlisle.....	16,323
Bedford.....	27,030	Nicolet.....	44,572
Berthierville.....	21,191	Noranda.....	66,540
Boucherville.....	10,961	Notre Dame du Lac.....	10,251
Bourlamaque.....	14,424	Ormstown.....	10,346
Brownsburg.....	13,709	Paspébiac.....	13,567
Buckingham.....	34,102	Plessisville.....	33,346
Cabano.....	13,338	Plessisville Station.....	13,407
Cap Chat.....	11,652	Port Alfred.....	18,389
Cap de la Madeleine.....	123,740	Princeville.....	19,831
Causapscal.....	20,569	Quebec.....	3,758,672
Chambly.....	17,269	Rawdon.....	16,729
Chandler.....	24,858	RCAF Station, St. Hubert.....	29,131
Charlesbourg.....	10,041	RCAF Station, St. Jean.....	14,354
Chibougamau.....	19,820	Richmond.....	28,014
Chicoutimi.....	233,014	Rigaud.....	12,039
Coaticook.....	31,623	Rimouski.....	200,191
Cookshire.....	12,901	Rivière du Loup.....	77,772
Cowansville.....	44,097	Roberval.....	41,082
Danville.....	14,337	Rock Island.....	33,971
Disraeli.....	10,663	Rosemere.....	14,047
Dolbeau.....	36,636	Rouyn.....	101,553
Donnacoona.....	18,229	Ste. Adèle en Bas.....	12,717
Dorion-Vaudreuil.....	31,555	Ste. Agathe des Monts.....	43,762
Drummondville.....	196,786	Ste. Anne de Beaupré.....	23,857
East Angus.....	15,940	Ste. Anne de Bellevue.....	44,144
Farnham.....	38,932	Ste. Anne de la Pocatière.....	24,395
Forestville.....	21,354	Ste. Anne des Monts.....	13,073
Gardenvale.....	283,072	St. Bruno.....	11,002
Gaspé.....	32,990	St. Césaire.....	10,047
Gatineau.....	28,593	St. Eustache.....	40,029
Granby.....	210,075	St. Félix.....	25,881
Grand'Mère.....	77,678	St. Gabriel de Brandon.....	14,546
Hauterive.....	20,036	St. Geneviève.....	28,621
Hudson.....	12,770	St. Georges West.....	13,052
Hull.....	221,674	St. Hilaire Village.....	11,374
Huntingdon.....	25,386	St. Hyacinthe.....	195,547
Jacques Cartier.....	297,641	St. Jean.....	205,737
Joliette.....	128,396	St. Jean Port Joli.....	12,976
Jonquière-Kenogami.....	98,819	St. Jérôme.....	132,790
Knowlton.....	14,306	St. Joseph de Beauce.....	15,688
Labrieville South.....	13,632	St. Jovite.....	16,171
Lachine.....	556,041	Ste. Marie Beauce.....	28,653
Lachute.....	64,665	St. Pascal.....	14,918
Lac Échemin.....	10,373	St. Raymond.....	15,963
Lac Mégantic.....	32,797	St. Rémi.....	13,794
Lacolle.....	15,996	Ste. Rose.....	27,807
La Malbaie.....	24,064	Ste. Thérèse de Blainville.....	59,502
Laprairie.....	21,966	St. Tite.....	14,829
La Sarre.....	35,544	Schefferville.....	28,665
L'Assomption.....	21,344	Senneterre.....	16,402
La Tuque.....	65,553	Sept Îles.....	78,778
Laval West.....	11,273	Shawinigan.....	155,478
Lennoxville.....	34,692	Shawville.....	17,203
L'Épiphanie.....	10,583	Sherbrooke.....	582,384
Lévis.....	227,131	Sorel.....	95,155
L'Isletville.....	11,042	Station St. Victor.....	19,598
Loretteville.....	24,335	Sutton.....	11,592
Louiseville.....	23,868	Terrebonne.....	19,006
MacDonald College.....	11,444	Thetford Mines.....	117,810
Magog.....	60,452	Thurso.....	11,799
Malartic.....	25,808	Timiskaming Station.....	16,395
Maniwaki.....	29,974	Trois Pistoles.....	23,663
Mariville.....	18,920	Trois Rivières.....	439,832
Matane.....	62,386	Valcartier Camp.....	10,973
McMasterville.....	10,459	Val d'Or.....	87,615
Metabetchouan.....	13,020	Valleyfield.....	113,390
Mistassini.....	10,040	Victoriaville.....	117,135
Mont Joli.....	45,076	Ville Marie.....	13,684
Mont Laurier.....	40,348	Ville St. Georges.....	42,050
Montmagny.....	58,787	Warwick.....	14,592
Montreal.....	24,267,870	Waterloo.....	33,165
Murdochville.....	11,915	Windsor.....	18,732

**18.—Gross Postal Revenue of Post Offices Collecting Upwards of \$10,000, Year Ended
Mar. 31, 1959—continued**

Province and Post Office	1959	Province and Post Office	1959
	\$		\$
Ontario.....	72,968,705	Ontario—continued	
Acton.....	89,131	Durham.....	17,256
Agincourt.....	57,273	Eganville.....	15,070
Ajax.....	67,643	Elliot Lake.....	118,802
Alexandria.....	22,271	Elmira.....	31,212
Alliston.....	28,015	Elora.....	10,729
Almonte.....	19,625	Englehart.....	14,517
Amherstburg.....	36,778	Espanola.....	25,762
Ancaster.....	31,653	Essex.....	35,131
Ansonville.....	15,583	Exeter.....	27,447
Arnprior.....	68,777	Fenelon Falls.....	15,752
Arthur.....	10,602	Fergus.....	50,897
Atikokan.....	36,262	Fonthill.....	15,711
Aurora.....	73,730	Forest.....	21,200
Aylmer West.....	48,197	Fort Erie.....	112,268
Bancroft.....	37,689	Fort Frances.....	68,699
Barrie.....	225,665	Fort William.....	411,382
Barry's Bay.....	10,815	Galt.....	286,578
Bartonville.....	17,585	Gananoque.....	50,088
Batawa.....	22,682	Garson.....	10,884
Beamsville.....	28,166	Georgetown.....	99,549
Beaverton.....	13,712	Geraldton.....	28,048
Belle River.....	10,497	Glencoe.....	13,821
Belleville.....	319,831	Goderich.....	56,418
Blenheim.....	36,219	Gore Bay.....	12,506
Blind River.....	35,673	Gravenhurst.....	38,751
Bobcaygeon.....	10,538	Grimsby.....	48,459
Bolton.....	14,031	Guelph.....	420,292
Bowmanville.....	57,032	Hagersville.....	24,372
Bracebridge.....	40,390	Haileybury.....	24,251
Bradford.....	23,445	Haliburton.....	19,233
Brampton.....	229,735	Hamilton.....	2,918,809
Brantford.....	625,296	Hanover.....	41,494
Brighton.....	20,976	Harriston.....	14,167
Brockville.....	211,385	Harrow.....	22,496
Burford.....	10,732	Havelock.....	10,824
Burk's Falls.....	11,890	Hawkesbury.....	39,457
Burlington.....	223,551	Hearst.....	28,952
Byron.....	21,739	Hespeler.....	31,343
Caledonia.....	17,688	Highland Creek.....	23,701
Campbellford.....	29,245	Hornepayne.....	10,256
Camp Borden.....	30,544	Huntsville.....	61,856
Capreol.....	12,761	Hurdman's Bridge (Ottawa).....	13,273
Cardinal.....	17,152	Ingersoll.....	62,730
Carleton Place.....	35,938	Iroquois.....	13,484
Cayuga.....	12,566	Iroquois Falls.....	13,473
Chalk River.....	20,969	Islington.....	367,553
Chapleau.....	28,989	Jamesstown.....	23,962
Chatham.....	336,942	Kapuskasing.....	55,520
Chelmsford.....	14,034	Kemptville.....	23,407
Chesley.....	14,565	Kenora.....	111,665
Chesterville.....	12,024	Keswick.....	10,003
Chippawa.....	14,782	Kincardine.....	28,987
Clarkson.....	44,925	King City.....	11,344
Clifford.....	18,891	Kingston.....	571,639
Clinton.....	35,895	Kingsville.....	34,061
Cobalt.....	15,948	Kirkland Lake.....	117,810
Cobourg.....	107,994	Kitchener.....	785,025
Cochrane.....	42,668	Lakefield.....	18,470
Colborne.....	11,786	Lambeth.....	12,295
Collingwood.....	83,284	Leamington.....	131,001
Cooksville.....	77,229	Levack.....	11,335
Copper Cliff.....	36,856	Lindsay.....	115,201
Cornwall.....	269,710	Listowel.....	33,786
Corunna.....	16,447	Little Current.....	17,735
Deep River.....	26,051	Lockerby.....	10,095
Delhi.....	38,009	London.....	2,349,530
Deseronto.....	11,561	Lorne Park.....	14,302
Don Mills.....	314,151	Lucknow.....	11,919
Downsview.....	314,768	Madoc.....	13,762
Dresden.....	18,987	Malton.....	40,543
Dryden.....	51,045	Manitouwadge.....	15,240
Dundas.....	91,884	Maple.....	19,960
Dunnville.....	63,009	Marathon.....	18,538

**18.—Gross Postal Revenue of Post Offices Collecting Upwards of \$10,000, Year Ended
Mar. 31, 1959—continued**

Province and Post Office	1959	Province and Post Office	1959
	\$		\$
Ontario—continued		Ontario—concluded	
Markdale.....	13,128	Seaforth.....	25,381
Markham.....	29,041	Shelburne.....	15,757
Marmora.....	10,686	Simcoe.....	115,415
Matheson.....	12,806	Sioux Lookout.....	27,228
Mattawa.....	15,851	Smith's Falls.....	136,356
Meaford.....	31,059	Smithville.....	11,350
Midland.....	75,194	Smooth Rock Falls.....	12,049
Milton West.....	52,344	Southampton.....	14,471
Minden.....	16,422	South Porcupine.....	27,964
Mitchell.....	16,557	Sprague.....	15,449
Morrisburg.....	19,068	Stayner.....	16,592
Mount Forest.....	26,365	Stirling.....	11,971
Napanee.....	51,668	Stoney Creek.....	48,799
New Hamburg.....	22,467	Stouffville.....	25,980
New Liskeard.....	93,392	Stratford.....	267,464
Newmarket.....	85,001	Strathroy.....	54,166
Niagara Falls.....	559,710	Streetsville.....	40,476
Niagara-on-the-Lake.....	21,475	Sturgeon Falls.....	30,070
Nipigon.....	16,977	Sudbury.....	540,904
North Bay.....	344,590	Sundridge.....	10,417
Norwich.....	16,167	Sutton West.....	14,383
Oakville.....	316,585	Tavistock.....	10,032
Orangeville.....	44,818	Tecumseh.....	21,236
Orillia.....	164,872	Terrace Bay.....	12,514
Oshawa.....	781,502	Thamesville.....	13,131
Ottawa.....	3,973,512	Thessalon.....	13,994
Owen Sound.....	210,540	Thistletown.....	10,881
Palmerston.....	12,103	Thornhill.....	24,516
Paris.....	210,138	Thorold.....	96,446
Parkhill.....	11,728	Tilbury.....	21,247
Parry Sound.....	59,620	Tillsonburg.....	82,468
Pembroke.....	144,083	Timagami.....	10,370
Penetanguishene.....	23,394	Timmins.....	184,239
Perth.....	68,191	Toronto.....	36,359,495
Petawawa Camp.....	19,919	Trenton.....	131,162
Peterborough.....	526,851	Tweed.....	19,807
Petrolia.....	27,278	Unionville.....	10,573
Pickering.....	19,612	Uxbridge.....	22,655
Pictou.....	58,659	Vankleek Hill.....	10,675
Point Edward.....	13,030	Vineland Station.....	11,278
Port Arthur.....	384,554	Virginiatown.....	11,890
Port Burwell.....	24,015	Walkerton.....	36,179
Port Colborne.....	102,799	Wallaceburg.....	77,660
Port Credit.....	206,162	Waterdown.....	18,654
Port Dalhousie.....	19,875	Waterford.....	16,465
Port Dover.....	22,893	Waterloo.....	302,055
Port Elgin.....	16,896	Watford.....	15,055
Port Hope.....	86,234	Welland.....	250,493
Port Perry.....	16,439	West Hill.....	25,982
Powassan.....	11,388	West Lorne.....	10,559
Prescott.....	55,038	Weston.....	498,805
Preston.....	123,689	Wheatley.....	12,395
Rainy River.....	10,486	Whitby.....	66,542
RCAF Station, Border.....	15,400	Wierton.....	18,689
RCAF Station, Centralia.....	10,979	Willowdale.....	369,414
RCAF Station, Clinton.....	15,886	Winchester.....	15,975
RCAF Station, Trenton.....	35,022	Windsor.....	1,515,642
RCAF Station, Uplands (Ottawa).....	11,878	Wingham.....	32,601
Red Lake.....	17,453	Winona.....	10,775
Renfrew.....	68,801	Woodbridge.....	22,251
Rexdale.....	175,383	Woodstock.....	251,508
Richmond Hill.....	74,611		
Ridgetown.....	25,902	Manitoba.....	10,241,797
Ridgeway.....	18,115	Altona.....	20,306
Rodney.....	11,869	Beauséjour.....	17,369
St. Catharines.....	667,134	Boissevain.....	13,557
St. Mary's.....	40,752	Brandon.....	294,776
St. Thomas.....	235,668	Carman.....	19,094
Sarnia.....	414,028	Churchill.....	11,508
Sault Ste. Marie.....	360,386	Dauphin.....	82,252
Scarborough.....	582,993	Flin Flon.....	69,755
Scarborough Village.....	13,239	Fort Churchill.....	33,370
Schreiber.....	12,893	Gimli.....	12,787
Schumacher.....	18,220	Gladstone.....	10,494

**18.—Gross Postal Revenue of Post Offices Collecting Upwards of \$10,000, Year Ended
Mar. 31, 1959—continued**

Province and Post Office	1959	Province and Post Office	1959
	\$		\$
Manitoba—concluded		Saskatchewan—concluded	
Grand View.....	10,384	Wilkie.....	15,476
Killarney.....	14,651	Wynyard.....	21,895
Lynn Lake.....	14,468	Yorkton.....	112,421
Melita.....	10,379		
Minnedosa.....	22,039	Alberta	10,780,264
Morden.....	19,760	Athabasca.....	17,364
Morris.....	10,712	Banff.....	71,610
Neepawa.....	32,488	Barrhead.....	20,883
Pine Falls.....	12,935	Beaverlodge.....	12,666
Portage la Prairie.....	104,221	Blairmore.....	12,829
Rivers.....	11,896	Bonnyville.....	16,163
Roblin.....	15,864	Bowden.....	18,755
Russell.....	13,938	Bowness.....	24,656
Selkirk.....	38,857	Brooks.....	31,869
Shilo.....	17,816	Calgary.....	3,275,324
Souris.....	16,368	Camrose.....	65,079
Steinbach.....	29,331	Cardston.....	22,855
Stonewall.....	10,107	Castor.....	10,280
Swan River.....	29,957	Château Lake Louise.....	10,361
The Pas.....	45,911	Clareholm.....	21,050
Thompson.....	13,576	Coaldale.....	16,472
Transcona.....	27,233	Coleman.....	10,276
Virden.....	29,287	Currie Barracks.....	13,805
Wawanesa.....	12,272	Didsbury.....	16,708
Winkler.....	14,712	Drayton Valley.....	30,834
Winnipeg.....	8,286,185	Drumheller.....	41,851
		Edmonton.....	3,974,155
Saskatchewan	7,512,437	Edson.....	33,043
Assiniboia.....	29,343	Fairview.....	15,986
Biggar.....	20,122	Falher.....	10,052
Broadview.....	11,020	Forest Lawn.....	13,973
Canora.....	19,643	Fort Macleod.....	20,407
Carlyle.....	10,630	Fort Saskatchewan.....	20,453
Davidson.....	12,383	Grande Prairie.....	83,935
Eldorado.....	10,583	Griesbach.....	13,154
Esterhazy.....	10,122	Hanna.....	25,277
Estevan.....	79,581	High Prairie.....	18,450
Eston.....	15,078	High River.....	23,748
Foam Lake.....	11,774	Hinton.....	22,963
Fort Qu'Appelle.....	11,299	Innisfail.....	27,037
Fort San.....	14,052	Jasper.....	29,592
Gravelbourg.....	16,297	Lac la Biche.....	11,600
Grenfell.....	11,806	Lacombe.....	37,343
Hudson Bay.....	12,325	Lancaster Park.....	19,927
Humboldt.....	31,549	Leduc.....	19,085
Indian Head.....	17,324	Lethbridge.....	377,158
Kamsack.....	20,383	Lincoln Park.....	13,214
Kerrobert.....	13,675	Medicine Hat.....	167,663
Kindersley.....	29,995	Nanton.....	11,129
Lloydminster.....	59,215	North Edmonton.....	24,877
Maple Creek.....	22,539	Olds.....	30,896
Meadow Lake.....	21,725	Peace River.....	40,417
Melfort.....	40,555	Pincher Creek.....	25,390
Melville.....	36,509	Ponoka.....	37,002
Moose Jaw.....	293,889	Provost.....	12,848
Moosomin.....	20,665	Raymond.....	15,420
Nipawin.....	27,397	RCAF Station, Cold Lake.....	22,699
North Battleford.....	117,483	Redcliff.....	10,359
Outlook.....	12,092	Red Deer.....	181,907
Oxbow.....	12,849	Rimbe.....	11,653
Prince Albert.....	210,949	Rocky Mountain House.....	20,088
Regina.....	2,958,026	St. Paul.....	26,648
Rosetown.....	29,852	Spirit River.....	11,739
Rosthern.....	14,660	Stettler.....	39,746
Saskatoon.....	1,121,623	Stony Plain.....	12,902
Shaunavon.....	21,551	Taber.....	32,139
Shellbrook.....	11,853	Three Hills.....	45,290
Swift Current.....	128,105	Tofield.....	10,133
Tisdale.....	28,337	Vegreville.....	28,004
Unity.....	19,621	Vermilion.....	28,155
Uranium City.....	33,934	Viking.....	11,197
Wadena.....	15,395	Vulcan.....	16,357
Watrous.....	13,568	Wainwright.....	29,352
Weyburn.....	74,526	Westlock.....	25,791
		Wetaskiwin.....	48,539

18.—Gross Postal Revenue of Post Offices Collecting Upwards of \$10,000, Year Ended Mar. 31, 1959—concluded

Province and Post Office	1959	Province or Territory and Post Office	1959
	\$		\$
British Columbia	16,212,039	British Columbia—concluded	
Abbotsford.....	60,874	Qualicum Beach.....	15,119
Alberni.....	31,796	Quesnel.....	57,568
Aldergrove.....	18,074	Revelstoke.....	36,652
Alert Bay.....	11,861	Rossland.....	21,493
Armstrong.....	17,025	Royal Oak.....	20,309
Ashcroft.....	13,458	Salmon Arm.....	37,929
Burns Lake.....	17,338	Sardis.....	15,509
Campbell River.....	49,080	Sechelt.....	11,703
Castlegar.....	17,803	Sidney.....	34,217
Chemainus.....	20,554	Smithers.....	29,358
Chilliwack.....	124,868	100 Mile House.....	13,113
Clearbrook.....	12,248	Squamish.....	12,314
Clinton.....	10,614	Steveston.....	15,917
Cloverdale.....	56,422	Terrace.....	39,691
Courtenay.....	74,572	Trail.....	146,079
Cranbrook.....	61,816	Vancouver.....	9,034,229
Creston.....	33,854	Vanderhoof.....	18,120
Dawson Creek.....	102,166	Vedder Crossing.....	13,401
Duncan.....	94,116	Vernon.....	144,033
Enderby.....	12,181	Victoria.....	1,759,310
Essondale.....	12,361	Victoria Fleet Mail Office.....	26,108
Fernie.....	22,849	West Summerland.....	22,703
Fort St. John.....	51,709	Westview.....	32,810
Ganges.....	14,234	White Rock.....	64,424
Gibsons.....	15,688	Williams Lake.....	50,419
Golden.....	15,635		
Grand Forks.....	22,607		
Haney.....	55,527		
Hope.....	25,465	Yukon Territory	132,432
Invermere.....	10,638	Dawson.....	11,171
Kamloops.....	208,013	RCAF Station, Whitehorse.....	11,730
Kelowna.....	187,178	Whitehorse.....	88,287
Kimberley.....	39,149		
Kitimat.....	88,690		
Ladner.....	38,991		
Ladysmith.....	21,311	Northwest Territories	86,945
Lake Cowichan.....	13,937	Fort Smith.....	10,537
Langley.....	53,098	Yellowknife.....	40,832
Lillooet.....	13,633		
McBride.....	10,088		
Merritt.....	19,041		
Mission City.....	55,815		
Nakusp.....	11,550		
Nanaimo.....	200,551	Summary	
Nelson.....	131,084	Newfoundland.....	1,676,104
Newton Station.....	17,788	Prince Edward Island.....	486,883
New Westminster.....	694,979	Nova Scotia.....	5,135,796
Ocean Falls.....	25,995	New Brunswick.....	4,094,629
Olivier.....	30,298	Quebec.....	39,714,365
Osoyoos.....	18,280	Ontario.....	72,968,706
Parksville.....	15,828	Manitoba.....	10,241,797
Penticton.....	163,091	Saskatchewan.....	7,512,437
Port Alberni.....	100,006	Alberta.....	10,780,264
Port Coquitlam.....	27,843	British Columbia.....	16,212,039
Port Moody.....	17,554	Yukon and N.W.T.....	219,378
Powell River.....	33,610		
Prince George.....	133,505	Canada	169,042,395
Prince Rupert.....	119,197		
Princeton.....	20,738	P.C. of all Postal Revenue.....	93.5

Auxiliary Postal Services.—Auxiliary postal services include the issuing of money orders and the operation of the Post Office Savings Bank.

Table 19 shows the amount of money order business conducted by the postal service in recent years. A table showing the financial business of the Post Office Savings Bank will be found in Chapter XXIV on Currency and Banking.

19.—Operations of the Money Order System, Years Ended Mar. 31, 1950-59

Year	Money Order Offices in Canada	Money Orders Issued in Canada	Value of Orders Issued in Canada	Value Payable in—		Value of Orders Issued in Other Countries, Payable in Canada
				Canada	Other Countries	
	No.	No.	\$	\$	\$	\$
1950.....	11,252	38,567,500	479,520,987	473,364,799	6,156,187	6,697,818
1951.....	11,387	40,415,207	511,915,621	505,935,524	5,980,096	3,920,218
1952.....	11,320	41,782,109	580,823,622	571,396,122	9,427,500	3,019,522
1953.....	11,288	43,067,940	623,266,884	606,289,305	16,977,579	4,982,551
1954.....	11,264	45,797,958	676,080,657	656,515,831	19,564,826	4,763,566
1955.....	11,200	46,902,959	690,824,787	668,930,066	21,894,721	5,008,716
1956.....	11,099	49,081,082	725,930,733	704,230,646	21,700,086	4,643,217
1957.....	11,022	51,182,296	799,615,004	772,708,244	26,906,761	5,033,806
1958.....	10,934	52,898,954	845,647,439	818,333,292	27,314,147	5,394,568
1959.....	10,823	53,746,050	853,443,891	825,973,053	27,470,837	5,026,970

Section 3.—The Press

An article in the 1957-58 Year Book traces developments in Canadian journalism from their beginnings in 1752 to (circa) 1900. A second article appearing in the 1959 edition brings that account up to the date of writing (1958). The complete presentation is available in reprint form from the Dominion Bureau of Statistics.

Daily newspapers published in Canada numbered 113 in 1959, counting morning and evening editions separately. They had an aggregate reported circulation of close to 4,000,000—about 81 p.c. in English, 17 p.c. in French and the remainder in other languages. Twelve of the daily newspapers enjoying circulations in excess of 100,000 accounted for more than half of the circulation. French dailies, as would be expected, have their widest circulation in Quebec where 10 of the 12 in existence in 1959 were published. Some of the largest of these papers have been established in that province for over 60 years. Foreign-language publications, shown in Table 24, are gaining in circulation as a result of recent heavy immigration.

Weekly newspapers serve more people in rural communities than do the dailies. They cater to local interests and exercise an important influence in the areas they serve.

The Canadian Press, a co-operative organization owned and operated by Canada's daily newspapers, provides its 100 members with world and Canadian news and news photographs, mostly by means of teletype and wirephoto transmission. It also serves weekly newspapers and radio and television stations. It is, in effect, a partnership through which each member newspaper provides to its fellow members the news of its particular area and through which the general news of the world is brought to Canada. Cost of editing and transmission is divided among members according to the population of the cities in

which they publish. CP gets world news from Reuters, the British agency, and from the Associated Press, the United States co-operative, and these agencies have reciprocal arrangements with CP for their coverage of Canada.

The British United Press is a limited company in Canada and maintains a close association with the United Press International, of which it is an affiliate. From its headquarters in Montreal and its 12 Canadian bureaus, it serves directly (1960) North America, South America, Europe and Australia with news from Canada, as well as 185 subscribers including 58 private broadcasting stations in Canada. Agence France Presse maintains offices in Montreal and Ottawa and certain foreign newspapers have agencies in Ottawa to interpret Canadian news for their readers.

Press Statistics.—The following tables are based on data estimated from *Canadian Advertising*. One serious difficulty has been encountered in connection with the compilation of circulation figures. Reliable circulation figures are relatively easy to obtain for daily newspapers because, in their own best interest, such papers qualify for and subscribe to the Audit Bureau of Circulation requirements: for these, A.B.C. 'net paid' figures have been used. However, it is difficult to obtain reliable circulation figures for many weekly newspapers and for magazines, and those shown in the following tables should be used with reservations.

**20.—Estimated Numbers and Circulations¹ of reporting Daily and Weekly²
English-Language Newspapers, by Province, 1957-59**

Note.—Figures from 1945 will be found in the corresponding table of previous Year Books beginning with the 1947 edition.

Province or Territory	1957				1958				1959			
	Daily		Weekly		Daily		Weekly		Daily		Weekly	
	No.	Circulation	No.	Circulation	No.	Circulation	No.	Circulation	No.	Circulation	No.	Circulation
Nfld.....	3	33,789	5	32,780	3	30,508	4	32,494	3	27,387	5	33,546
P.E.I.....	3	24,814	1	5,626	3	24,635	—	—	3	24,343	—	—
N.S.....	6*	150,670	26	83,103	6	149,936	27	91,688	6	148,662	28	94,165
N.B.....	5*	82,048	15	50,899	5	82,362	14	47,527	5	85,576	14	47,097
Que.....	5	323,241	24	1,561,429 ³	4	302,315	26	1,572,776 ³	4	310,221	27	1,667,940 ³
Ont.....	43*	1,735,337	245	1,914,073 ⁴	44	1,635,886	239	1,817,226 ⁴	45	1,597,981	247	1,851,940 ⁴
Man.....	6	207,207	67	84,348	6	208,675	67	86,681	6	214,582	67	87,528
Sask.....	4	101,943	155	151,548	4	104,625	148	134,544	4	106,459	145	139,591
Alta.....	5	224,511	109	178,141	5	225,439	103	166,757	5	236,966	105	177,446
B.C.....	15	487,851	82	196,315	14	442,214	83	226,040	14	433,768	83	237,984
Yukon and N.W.T.....	—	—	2	4,111	—	—	2	4,111	—	—	2	4,500
Canada....	95*	3,321,411	731	4,262,373	94	3,206,595	713	4,179,844	95	3,185,945	723	4,341,737

¹ Circulation not reported for all newspapers.

² Includes semi-weeklies, tri-weeklies and week-end newspapers.

³ Includes one week-end newspaper which is circulated with daily newspapers in other provinces.

⁴ Includes one week-end newspaper which is circulated with a daily.

21.—Estimated Numbers and Circulations¹ of reporting Daily and Weekly² French-Language Newspapers, by Province, 1957-59

NOTE.—Figures from 1945 will be found in the corresponding table of previous Year Books beginning with the 1947 edition.

Province	1957				1958				1959			
	Daily		Weekly ³		Daily		Weekly ³		Daily		Weekly ³	
	No.	Circulation	No.	Circulation	No.	Circulation	No.	Circulation	No.	Circulation	No.	Circulation
N.S.....	—	—	1	1,551	—	—	1	1,654	—	—	1	1,715
N.B.....	1 ¹	7,631 ¹	2	8,351	1	8,818	2	8,295	1	10,026	2	8,294
Que.....	11 ¹	620,337	147	2,299,061 ⁴	10	613,926	141	2,151,117 ⁴	10	639,783	146	2,356,209 ⁵
Ont.....	1	29,567	6	16,515	1	30,060	5	15,325	1	31,080	5	14,102
Man.....	—	—	1	8,315	—	—	1	7,810	—	—	1	7,868
Sask.....	—	—	1	2,008	—	—	2	1,822	—	—	2	2,044
Alta.....	—	—	1	3,451	—	—	1	3,373	—	—	1	2,467
Totals.....	13¹	657,535¹	159	2,339,252	12	652,804	153	2,189,396	12	680,889	158	2,392,699

¹ Circulation not reported for all newspapers. ² Includes semi-weeklies, tri-weeklies and week-end newspapers. ³ Includes bilinguals. ⁴ Includes one week-end newspaper which is circulated with other newspapers. ⁵ Includes two week-end newspapers which are circulated with other newspapers.

22.—Estimated Numbers and Circulations of reporting Daily and Weekly English-Language Newspapers Published in Urban Centres of 30,000 Population or Over, 1958 and 1959

NOTE.—Figures from 1945 will be found in the corresponding table of previous Year Books beginning with the 1947 edition.

Urban Centre	Census 1956	Households	1958				1959			
			Daily		Weekly		Daily		Weekly	
			No.	Circulation	No.	Circulation	No.	Circulation	No.	Circulation
Brantford, Ont.....	14,642	1	22,246	—	—	—	1	21,119	—	—
Calgary, Alta.....	52,785	2	101,047	1	11,600	2	105,965	1	16,500	—
Edmonton, Alta.....	57,748	1	101,048	1	5,029	1	106,608	1	5,890	—
Fort William, Ont.....	10,118	1	15,228	—	—	—	1	15,453	—	—
Guelph, Ont.....	9,284	1	12,950	—	—	—	1	13,104	—	—
Halifax, N.S.....	21,194	2	107,162	—	—	—	2	107,131	—	—
Hamilton, Ont.....	63,815	1	99,631	—	—	—	1	102,085	—	—
Kingston, Ont.....	12,499	1	20,201	1	55,513 ¹	1	21,085	—	—	—
Kitchener, Ont.....	16,074	1	33,605	—	—	—	1	34,468	—	—
London, Ont.....	28,962	1	101,816	—	—	—	2	105,780	—	—
Moncton, N.B.....	8,647	2	24,576	—	—	—	2	25,861	—	—
Montreal, Que.....	285,501	2	287,871	4	1,507,674 ²	2	295,867	4	1,587,054 ³	—
New Westminster, B.C.....	8,874	1	15,412	—	—	—	1	17,539	—	—
Oshawa, Ont.....	13,530	1	15,527	—	—	—	1	16,260	—	—
Ottawa, Ont.....	56,059	2	131,232	1	6,500	2	139,859	1	6,500	—
Peterborough, Ont.....	11,632	1	21,850	1	5,621	1	22,286	1	5,621	—
Port Arthur, Ont.....	9,979	1	13,960	—	—	—	1	14,149	—	—
Quebec, Que.....	38,556	1	5,638	—	—	—	1	5,594	—	—
Regina, Sask.....	23,883	1	49,804	—	—	—	1	51,747	—	—
St. Catharines, Ont.....	10,971	1	26,235	—	—	—	1	27,159	—	—
St. John's, Nfld.....	11,219	2	24,722	2	26,450 ⁴	2	21,777	2	25,446 ⁴	—
Saint John, N.B.....	13,336	2	45,131	1	7,440	2	46,031	1	7,240	—
Sarnia, Ont.....	11,917	1	15,843	1	15,000	1	15,371	1	15,000	—
Saskatoon, Sask.....	20,315	1	39,164	—	—	—	1	39,696	—	—
Sault Ste. Marie, Ont.....	9,169	1	15,365	—	—	—	1	15,646	—	—
Sherbrooke, Que.....	13,646	1	8,806	1	3,400	1	8,760	1	3,400	—
Sudbury, Ont.....	11,526	1	29,808	—	—	—	1	25,915	—	—
Sydney, N.S.....	6,914	1	26,645	—	—	—	1	25,320	—	—
Toronto, Ont.....	157,137	4	797,116	8	1,219,970 ⁵	4	736,957	9	1,292,763 ⁵	—
Trois Rivières, Que.....	10,912	—	—	1	4,165	—	—	1	4,168	—
Vancouver, B.C.....	108,953	2	327,314	8	69,177	2	318,365	8	70,794	—
Verdun, Que.....	21,009	—	—	—	—	—	—	—	—	—
Victoria, B.C.....	17,309	2	53,155	1	1,987	2	51,243	1	1,987	—
Windsor, Ont.....	33,280	1	77,662	—	—	—	1	77,360	—	—
Winnipeg, Man.....	67,798	2	191,742	1	..	2	196,748	1	..	—

¹ Week-end newspaper. ² Includes two week-end newspapers one of which is circulated with daily newspapers in other cities. ³ Includes one week-end newspaper circulated with daily newspapers in other cities. ⁴ Includes one week-end newspaper. ⁵ Includes three week-end newspapers.

23.—Estimated Numbers and Circulations of reporting Daily and Weekly French-Language Newspapers Published in Urban Centres of 30,000 Population or Over, 1953 and 1959

NOTE.—Figures from 1945 will be found in the corresponding table of previous Year Books beginning with the 1947 edition.

Urban Centre	Census 1956	1953				1959			
	House- holds	Daily		Weekly		Daily		Weekly	
		No.	Circulation	No.	Circulation	No.	Circulation	No.	Circulation
Edmonton, Alta.....	57,748	—	—	1	3,373	—	—	1	2,467
Hull, Que.....	11,167	—	—	3	94,206 ¹	—	—	3	64,849 ¹
Lachine, Que.....	8,557	—	—	1	15,300 ²	—	—	1	15,000 ²
Moncton, N.B.....	8,647	1	8,818	—	—	1	10,026	—	—
Montreal, Que.....	285,501	3	349,675	23	1,535,025 ³	3	369,340	23	1,699,387 ⁴
Ottawa, Ont.....	56,059	1	30,000	—	—	1	31,080	—	—
Quebec, Que.....	38,556	3	189,576	2 ⁵	—	3	190,518	2 ⁵	25,000 ⁶
St. Laurent, Que.....	9,304	—	—	1	7,171 ²	—	—	2	10,171 ⁷
Sherbrooke, Que.....	13,646	1	33,190	1	38,170	1	34,137	1	38,170
Sudbury, Ont.....	11,526	—	—	1	1,989	—	—	1	1,989
Trois Rivières, Que.....	10,912	1	31,883	3	7,936 ⁸	1	33,308	3	7,936 ⁸
Verdun, Que.....	21,009	—	—	1	8,451	—	—	1	8,742

¹ Includes one week-end newspaper which is circulated with newspapers in other cities.

² Bilingual.

³ Includes 8 bilinguals and 13 week-end newspapers.

⁴ Includes 8 bilinguals and 12 week-end newspapers

including one which is circulated with newspapers in other cities.

⁵ Week-end newspapers.

for one week-end newspaper only.

⁷ Includes one bilingual.

⁸ Circulation for two weeklies only.

24.—Estimated Numbers and Circulations of Foreign-Language Publications, 1957-59

NOTE.—Figures from 1945 will be found in the corresponding table of previous Year Books beginning with the 1947 edition.

Language	1957		1958		1959	
	No.	Circulation	No.	Circulation	No.	Circulation
Bulgarian.....	2	4,500	—	—	—	—
Byelorussian.....	1	2,213	1	2,566	1	2,003
Chinese.....	5	12,866 ¹	4	16,609	4	16,973
Croat.....	2	10,700	2	11,066	2	11,066
Czech.....	2	8,090	2	8,408	2	6,247
Danish.....	—	—	1	2,443	1	2,443
Dutch.....	8	30,943	8	30,827	8	30,966
Estonian.....	2	10,208	2	9,840	2	9,274
Finnish.....	4	14,456	4	13,684	4	13,653
German.....	8	81,443	8	85,275	9	87,378
Greek.....	—	—	1	1,875	1	1,875
Hungarian.....	3	18,035	4	26,067	5	29,779
Icelandic.....	2	3,935	2	5,450	1	3,600
Italian.....	6	81,663	8	99,123	9	110,098
Japanese.....	2	7,010	2	6,975	2	6,975
Latvian.....	1	5,181	1	4,511	1	4,670
Lithuanian.....	3	9,923 ²	3	10,854 ²	3	11,149 ²
Macedonian.....	—	—	1	1,000	1	1,000
Maltese.....	1	1,480	1	1,558	1	1,683
Norwegian.....	1	4,326	1	4,362	1	4,362
Polish.....	4	41,530	3	26,737	3	22,565
Portuguese.....	—	—	—	—	1	5,230
Russian.....	1	4,018	1	3,810	1	3,810
Serbian.....	3	20,109	3	14,500	3	15,252
Slovak.....	—	—	1	3,115	2	4,707
Slovenian.....	1	3,230	1	3,230	1	3,375
Swedish.....	2	3,827	2	3,764	2	3,789
Ukrainian.....	17	138,419	16	125,222	16	124,521
Yiddish.....	4	54,890	4	51,387	4	51,387

¹ Circulation for four publications only.

² Circulation for two publications only.

25.—Estimated Numbers and Circulations of reporting Magazines and Related Publications, by Broad Classifications, 1957-59

NOTE.—Figures from 1945 will be found in the corresponding table of previous Year Books beginning with the 1947 edition.

Classification	1957			1958			1959		
	Listed	Reporting		Listed	Reporting		Listed	Reporting	
	No.	No.	Circulation	No.	No.	Circulation	No.	No.	Circulation
Agricultural and rural.....	55	53	2,672,052	53	51	2,456,852	54	52	2,685,704
Arts, crafts and professions.....	31	29	211,416	30	26	188,841	33	29	210,370
Construction.....	22	21	135,163	23	21	143,464	24	24	172,431
Educational.....	73	72	645,780	78	76	1,834,384	83	81	3,153,646
Finance and insurance.....	14	12	218,698	14	12	237,693	14	13	267,163
Government and government services.....	37	35	516,990	36	34	531,899	34	33	544,933
Home, social and welfare.....	40	37	4,439,383	41	40	4,469,405	47	44	4,790,349
Labour.....	14	13	277,490	13	11	262,890	13	10	254,690
Pharmaceutical and medical.....	37	33	178,921	40	36	173,548	38	36	186,816
Religious.....	34	34	902,303	34	34	937,744	35	35	1,349,043
Services and directories.....	80	64	691,698	84	77	830,964	87	79	871,793
Sports and entertainment.....	32	30	709,108	39	37	968,552	40	38	1,223,583
Trade, industry and related publications.....	209	202	1,177,814	209	202	1,350,262	205	199	1,277,212
Transportation and travel.....	38	37	460,731	42	40	610,699	46	44	732,590
Miscellaneous.....	11	11	119,463	15	14	138,558	13	13	121,601
Totals.....	727	683	13,357,010	751	711	15,135,755	766	730	17,841,924

CHAPTER XX.—DOMESTIC TRADE AND PRICES

CONSPECTUS

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NOTE.—The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

PART I.—THE MOVEMENT AND MARKETING OF COMMODITIES

Domestic trade is broad and complicated; it encompasses all values added to commodities traded, provincially and interprovincially, by agencies and services connected with the storage, distribution and sale of goods, such as railways, steamships, warehouses, wholesale and retail stores, financial institutions, etc. Taken in a wide sense, it embraces various professional and personal services including amusement services, such as theatres and sports. Only certain phases of this broad field are covered here and, wherever possible, cross references are given to related material appearing in other Chapters. The arrangement of material in a volume such as the Year Book is governed by the necessity of interpretation from various angles. The index will be found useful in this respect.

Section 1.—Merchandising and Service Establishments*

Complete coverage of the business of wholesale and retail trades and of service establishments is attempted only as part of the decennial census. The first such detailed survey was taken in connection with the 1931 Census and related to business transacted during the calendar year 1930. Similar detailed records were again secured with the 1941 and 1951 Censuses. The results of the 1930 and 1941 Censuses of Merchandising and Service Establishments are contained in Vols. X and XI of the Census reports for those years and the results of the 1951 Census of Distribution in Vols. VII and VIII of the 1951 Census reports. Summary data for 1951 are given in the 1955 Year Book, pp. 953-977.

The information collected at the census is supplemented in intercensal years by monthly, quarterly and annual surveys on the more important phases of the retail, wholesale and service trades—sample surveys for some businesses and full coverage for others. The 1951 Census formed a new base for such surveys and certain improvements have been implemented for continuance during the 1951-61 intercensal period.

Current information available on the more important phases of the distributive trades is given in the following Subsections. Estimates for the years prior to 1951 have been revised in accordance with the census base.

Subsection 1.—Wholesale Trade

Wholesale Sales.—Estimated sales of wholesalers expanded from \$5,784,400,000 in 1951 to \$7,643,500,000 in 1958. These figures include only wholesalers proper, i.e., they exclude agents and brokers and manufacturers' sales branches. Sales estimates are subject to revision and have not been adjusted for price changes.

* Prepared in the Merchandising and Services Section of the Industry and Merchandising Division, Dominion Bureau of Statistics.

1.—Wholesale Sales, by Kind of Business, 1955-58

NOTE.—Includes only wholesalers proper, i.e., firms performing the function of buying merchandise on their own account for resale. Figures for 1955-57 in this table have been revised since the publication of the 1959 Year Book.

Kind of Business	1955	1956	1957	1958
	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Fresh fruits and vegetables.....	224.4	230.2	228.2	252.7
Groceries and food specialties.....	1,046.9	1,117.2	1,215.2	1,328.3
Meat and dairy products.....	133.9	141.4	146.0	167.8
Clothing and furnishings.....	84.8	84.0	80.9	81.7
Footwear.....	28.8	28.9	27.9	28.9
Other textile and clothing accessories.....	182.6	196.3	197.1	210.5
Drugs and drug sundries.....	164.6	176.9	187.7	202.2
Household electrical appliances.....	164.4	183.0	159.5	164.5
Farm machinery.....	60.2	72.1	60.3	73.4
Coal and coke.....	148.0	171.0	162.0	139.4
Hardware.....	280.1	310.2	303.8	295.5
Construction materials and supplies, including lumber.....	704.8	760.3	732.8	770.6
Industrial and transportation equipment and supplies.....	561.6	742.2	721.4	621.7
Commercial, institutional and service equipment and supplies.....	89.8	102.9	102.7	106.6
Automotive parts and accessories.....	302.7	338.0	342.1	363.8
Newsprint, paper and paper products.....	240.5	264.3	265.0	257.3
Tobacco, confectionery and soft drinks.....	473.3	509.0	544.6	572.9
Other.....	1,725.2	2,076.7	1,989.3	2,004.7
Totals, All Trades.....	6,616.6	7,484.6	7,466.5	7,643.5

Operating Results of Wholesalers.—The latest survey of operating results of wholesalers, which show for certain trades operating expenses and profits in ratio to net sales, is for the year 1957. Summary data obtained at that survey are given in Table 2; detailed information for individual trades is given in DBS bulletins.

2.—Operating Results of Selected Wholesale Trades, 1957

(Percentage of Net Sales)

Kind of Business	Gross Profit	Selling Expense	Warehouse and Delivery Expense	Administrative and General Expense	Net Operating Profit	Net Non-trading Income	Net Profit before Income Tax
Grocery.....	6.84	1.11	2.15	3.12	0.46	0.59	1.05
Fruits and vegetables.....	12.14	1.85	5.27	4.17	0.85	0.32	1.17
Tobacco and confectionery.....	6.73	1.89	1.67	2.82	0.35	0.22	0.57
Dry goods.....	16.04	5.26	3.21	6.43	1.14	0.57	1.71
Piece goods.....	17.21	4.97	2.53	8.04	1.67	0.51	2.18
Footwear.....	13.60	3.35	2.29	6.50	1.46	0.76	2.22
Automotive parts and accessories.....	25.36	7.20	5.07	9.93	3.26	0.65	3.91
Hardware.....	20.05	4.82	3.54	8.36	3.33	0.10	3.43
Plumbing and heating supplies.....	16.97	3.84	3.02	7.18	2.93	—	2.93
Drug.....	11.79	1.75	3.31	5.28	1.45	0.56	2.01
Household appliances and electrical supplies.....	18.93	5.10	2.01	8.36	3.46	0.15	3.61

Subsection 2.—Retail Trade

The trend of retail trade is one of the best general indicators of the economic condition of the country. It is through retail stores that most goods are ultimately sold and such sales reflect the financial strength of the consumer except in times of short supply. The estimated value of retail sales nearly doubled in the ten years 1949-58. Estimates, not adjusted for price changes, are shown by province in Table 3 for 1930 and 1941-58 and by kind of business for the latest five years in Table 4.

3.—Retail Trade, by Province, 1930 and 1941-58

NOTE.—Figures for 1931-40 are given in the 1957-58 Year Book, p. 938.

Year	Atlantic Provinces ¹	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia ²	Canada ³
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
1930.....	197	646	1,091	188	188	175	251	2,736
1941.....	279	820	1,388	193	189	228	318	3,415
1942.....	301	876	1,447	206	201	243	346	3,619
1943.....	319	913	1,488	220	219	266	362	3,786
1944.....	351	976	1,574	243	249	296	404	4,093
1945.....	387	1,081	1,774	269	279	329	455	4,573
1946.....	491	1,342	2,265	338	341	416	593	5,787
1947.....	564	1,621	2,721	407	410	504	737	6,963
1948.....	607	1,792	3,067	466	473	611	818	7,535
1949.....	734	1,872	3,294	523	538	697	874	8,532
1950.....	822	2,183	3,715	567	571	777	982	9,617
1951.....	899	2,443	4,130	610	659	854	1,100	10,693
1952.....	982	2,635	4,383	651	764	939	1,177	11,532
1953.....	1,018	2,756	4,616	677	845	987	1,228	12,128
1954.....	1,025	2,798	4,634	637	758	964	1,249	12,066
1955.....	1,127	3,006	5,115	669	748	1,035	1,412	13,112
1956.....	1,211	3,322	5,499	700	812	1,159	1,594	14,298
1957.....	1,234*	3,521	5,663	726	855	1,211	1,616	14,826*
1958.....	1,290	3,647	5,934	754	914	1,275	1,631	15,444

¹ Newfoundland included from 1949.

² Includes the Yukon and Northwest Territories.

are not the exact addition of the components because of rounding of the figures.

³ Totals

4.—Retail Trade, by Kind of Business, 1954-58

Kind of Business	1954	1955	1956	1957*	1958
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Grocery and combination stores.....	2,279	2,430	2,639	2,894	3,126
Other food and beverage stores.....	924	950	1,044	1,082	1,120
General stores.....	515	530	568	596	625
Department stores.....	1,062	1,150	1,242	1,282	1,345
Variety stores.....	234	250	274	296	315
Motor vehicle dealers.....	2,029	2,370	2,542	2,483	2,414
Garages and filling stations.....	632	718	822	939	1,037
Men's clothing stores.....	207	214	230	235	238
Family clothing stores.....	191	200	215	218	227
Women's clothing stores.....	221	225	247	257	265
Shoe stores.....	121	123	129	136	146
Hardware stores.....	247	256	291	302	318
Lumber and building material dealers.....	406	451	483	458	482
Furniture, appliance and radio dealers.....	486	541	584	567	566
Restaurants.....	453	468	508	528	543
Fuel dealers.....	250	268	312	322	326
Drug stores.....	282	300	329	358	383
Jewellery stores.....	116	124	130	131	133
Miscellaneous.....	1,412	1,545	1,706	1,743	1,838
Totals, All Trades.....	12,066	13,112	14,298	14,826	15,444

Retail Chain Stores.—Retail chains are defined as companies operating four or more retail outlets in the same or related kinds of business. A consistent rise in sales has been evident since statistics were first compiled on chain store operations in 1930.

5.—Retail Chain Store Statistics, 1930 and 1941-53

Year	Stores	Net Retail Sales	Salaries and Wages Paid to Store Employees	Value of Stocks on Hand End of Year		Accounts Outstanding End of Year
				Stores	Warehouses	
	Av. No.	\$'000	\$'000	\$'000	\$'000	\$'000
1930.....	8,097	487,336	50,405	60,457	..	..
1941.....	7,622	639,210	57,777	68,619	20,976	38,376
1942.....	7,010	687,447	57,654	66,940	22,633	..
1943.....	6,780	703,950	58,804	67,628	22,602	15,527
1944.....	6,560	769,643	63,300	66,944	21,855	15,093
1945.....	6,580	876,209	68,196	68,247	29,013	16,368
1946.....	6,559	1,014,847	77,474	85,345	37,436	19,643
1947.....	6,716	1,177,323	91,266	105,040	43,546	31,492
1948.....	6,821	1,335,735	107,450	119,132	46,330	40,378
1949.....	6,839	1,420,081	115,903	123,696	46,755	50,001
1950.....	7,155	1,559,693	129,334	159,083	60,551	65,000
1951.....	7,846	1,775,744	153,599	186,562	60,490	53,816
1952.....	7,766	1,924,873	154,642	172,886	55,215	77,475
1953.....	7,835	2,048,228	171,167	179,704	52,096	91,538
1954.....	8,136	2,146,635	181,509	191,049	57,814	102,747
1955.....	8,274	2,353,955	199,611	205,833	63,120	127,362
1956.....	8,559	2,647,055	221,136	232,392	72,183	143,357
1957.....	8,822	2,841,569	242,979	248,284	78,521	148,506
1958.....	9,122	3,073,147	262,456	265,862	78,512	158,232

6.—Retail Chain Store Sales, by Province and by Kind of Business, 1954-58

Province and Kind of Business	1954	1955	1956	1957	1958
Province	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	13,865	12,982	15,267	24,079	23,849
Maritime Provinces.....	141,236	155,728	169,946	179,396	190,928
Quebec.....	447,238	488,374	540,628	576,718	619,584
Ontario.....	999,671	1,096,030	1,230,388	1,335,056	1,451,325
Manitoba.....	86,523	94,235	100,591	112,128	120,715
Saskatchewan.....	96,280	102,129	111,353	118,935	125,762
Alberta.....	146,932	160,909	182,111	197,763	219,751
British Columbia.....	209,202	237,734	289,846	289,463	309,336
Yukon and Northwest Territories.....	5,788	5,835	6,925	8,034	8,897
Canada.....	2,146,635	2,353,955	2,647,055	2,841,569	3,073,147
Kind of Business					
Foods and Beverages¹.....	1,353,278	1,486,644	1,685,394	1,835,648	1,994,366
Combination grocery and meat stores.....	870,580	970,793	1,104,060	1,249,288	1,368,883
Restaurants.....	33,900	34,602	36,374	36,194	38,236
Alcoholic beverage stores.....	432,714	465,772	527,952	550,143	556,883
General Merchandise (excl. department stores)¹.....	261,495	280,871	313,976	338,645	357,199
General stores.....	36,560	37,450	41,144	42,774	42,513
Variety stores.....	194,248	207,831	229,307	247,223	264,298
Automotive.....	35,014	39,923	42,043	48,299	56,022
Apparel and Accessories¹.....	162,239	175,077	190,674	202,078	222,490
Men's and boys' clothing and furnishings.....	25,350	27,037	28,866	28,159	29,157
Women's clothing stores.....	54,843	61,897	67,269	70,707	78,147
Family clothing stores.....	32,069	33,418	36,347	40,459	44,958
Shoes.....	45,384	48,054	53,433	57,822	63,938
Building Materials and Hardware.....	104,982	114,963	141,316	140,534	154,151
Furniture and Household Appliances.....	99,536	120,515	137,059	130,727	133,301
Other Retail Stores¹.....	130,090	135,962	136,592	145,638	155,618
Drug stores.....	35,908	36,660	41,299	45,437	49,812
Jewellery stores.....	38,954	43,016	46,301	45,205	47,017

¹ Includes other kinds of business not shown separately.

Operating Results of Retail Chain Stores.—A survey of the operating results of retail chain stores is carried out every second year. The latest figures available at time of printing are those for 1957. In that year six of the ten selected trades registered smaller ratios of net operating profit than those obtained in 1955.

7.—Operating Results of Retail Chain Stores for Selected Kinds of Business, 1957

(Percentage of Net Sales)

Kind of Business	Gross Profit	Salaries and Wages	Occupancy Expenses ¹	Total Operating Expenses ²	Net Operating Profit	Net Non-trading Income	Net Profit before Income Tax
Grocery.....	15.46	8.49	1.56	14.38	1.08	0.37	1.45
Combination grocery and meat.....	17.44	7.32	1.84	13.80	3.64	0.04	3.68
Meat.....	20.17	11.26	1.21	18.48	1.69	0.19	1.88
Men's clothing.....	32.13	15.60	4.86	30.12	2.01	0.42	2.43
Women's clothing.....	34.38	14.97	6.78	30.85	3.53	1.03	4.56
Family clothing.....	32.88	16.57	5.27	30.79	2.09	0.58	2.67
Shoe.....	33.95	15.51	6.72	29.08	4.87	0.06 ³	4.81
Variety.....	38.56	18.16	5.34	29.55	9.01	0.62	9.36
Drug.....	34.36	18.76	5.03	31.36	3.00	1.07	4.07
Furniture.....	36.69	16.81	4.43	41.46	4.77 ⁴	13.48	8.71

¹ Includes taxes and insurance, light, heat and power, repairs, maintenance, depreciation (except on delivery equipment) and rentals on rented premises. ² Includes salaries and wages and occupancy expenses. ³ Net non-trading expense. ⁴ Net operating loss.

Operating Results of Independent Retail Stores.—Operating results in the form of ratios to net sales are shown in Table 8 for eight trades. This series, formerly alternated with one for retail chain stores, is now on a biennial basis within the independent store category, i.e., one-half of the trades were surveyed for 1958 as shown in Table 8 and the remaining selected trades were surveyed for 1959; results for the latter were not available at the time of printing. They include the following kinds of business: furniture, household appliances, hardware, restaurants, fuel dealers, drug, jewellery, tobacco, filling stations and garages.

8.—Operating Ratios of Independent Retail Stores, by Kind of Business, 1958

(Percentage of Net Sales)

Kind of Business	Cost of Goods Sold	Gross Profit	Salaries and Wages ¹	Occupancy Expenses ²	Total Operating Expenses ³	Net Profit before Income Tax ⁴
Unincorporated						
Grocery.....	84.9	15.1	2.5	4.0	9.2	5.9
Combination.....	84.9	15.1	4.2	3.2	10.7	4.4
Meat.....	80.9	19.1	5.5	3.5	13.0	6.1
Confectionery.....	80.8	19.2	3.3	6.2	11.7	7.5
Fruits and vegetables.....	81.0	19.0	4.0	4.7	12.5	6.5
Men's clothing.....	71.4	28.6	6.6	5.9	18.2	10.4
Family clothing.....	72.9	27.1	7.4	6.0	18.7	8.4
Women's clothing.....	71.2	28.8	7.5	7.2	20.5	8.5
Family shoe.....	70.7	29.3	7.5	6.1	18.1	11.2
General stores.....	85.2	14.8	3.2	3.2	9.0	5.8
Incorporated						
Men's clothing.....	69.1	30.9	15.6	6.0	28.2	2.7
Family clothing.....	69.4	30.6	15.3	5.1	28.1	2.5
Women's clothing.....	68.1	31.9	17.0	6.9	30.4	1.5
Family shoe.....	66.8	33.2	17.3	6.7	29.8	3.4

¹ Excludes delivery and, for unincorporated stores, also excludes proprietors' salaries.

² Includes taxes and insurance, light, heat and power, repairs, maintenance, depreciation (except on delivery equipment) and rentals on rented premises.

³ Includes salaries and wages and occupancy expenses.

⁴ Includes, for unincorporated stores, proprietors' salaries or withdrawals.

New Motor Vehicle Sales.—Retail sales of new motor vehicles reached their peak level in 1956, dropping 5.9 p.c. in 1957 and an additional 0.3 p.c. in 1958. In the latter year, trucks and buses declined 10.8 p.c. in number with a corresponding decrease in value but, while new passenger car sales dropped 1.4 p.c. in number, their value rose by 2.1 p.c.

9.—Retail Sales of New Motor Vehicles, 1949-58

Year	Passenger Cars		Trucks and Buses		Totals	
	No.	\$	No.	\$	No.	\$
1949.....	202,318	412,297,863	84,023	176,426,822	286,341	588,724,685
1950.....	324,903	661,673,944	104,792	223,995,095	429,695	885,669,039
1951.....	275,686	683,182,846	109,962	266,976,655	385,648	950,159,511
1952.....	292,095	725,168,000	108,682	278,495,000	400,777	1,003,663,000
1953.....	359,172	899,726,000	103,354	262,745,000	462,526	1,162,471,000
1954.....	310,546	797,554,000	72,082	191,964,000	382,628	989,518,000
1955.....	386,962	1,023,351,000	78,716	232,539,000	465,678	1,255,890,000
1956.....	408,233	1,128,640,000	91,688	326,735,000	499,921	1,455,375,000
1957.....	382,023	1,087,620,000	76,276	281,311,000	458,299	1,368,931,000
1958.....	376,723	1,110,724,000	68,046	254,742,000	444,769	1,365,466,000

Farm Implement Sales.—Sales of new farm implements and equipment in Canada reached \$172,014,000 in 1958, a record level 15 p.c. above the previous year and 0.7 p.c. above the previous peak of 1956. Gains were evident in all major groups in 1958 and in all provinces. In addition to the above total, repair parts sold for \$33,978,663.

10.—Sales of Farm Implements and Equipment, by Major Group, 1954-58

(Values at Wholesale Prices)

Major Group	1954	1955	1956	1957*	1958	Percentage Change 1957-58
	\$'000	\$'000	\$'000	\$'000	\$'000	
Tractors and engines.....	55,168	58,760	63,262	56,651	63,171	+11.5
Ploughs.....	10,201	8,225	8,019	8,952	9,790	+ 9.4
Tilling, cultivating and weeding machinery.....	7,644	7,016	7,071	7,845	9,656	+23.1
Planting, seeding and fertilizing machinery.....	5,707	5,341	6,094	6,703	7,104	+ 6.0
Haying machinery.....	17,730	19,820	27,245	23,666	26,257	+11.4
Harvesting machinery.....	26,195	27,564	34,753	23,984	29,851	+24.5
Machines for preparing crops for market or for use.....	4,552	4,933	4,768	5,556	6,102	+ 9.8
Farm wagons, wagon trucks and sleighs.....	1,643	1,433	1,805	1,527	1,900	+24.4
Barn equipment.....	2,524	2,671	2,637	2,863	3,521	+23.0
Dairy machinery and equipment.....	3,414	3,953	4,787	5,468	6,458	+18.7
Spraying and dusting equipment.....	1,851	1,996	1,770	1,269	1,558	+22.8
Miscellaneous farm equipment.....	10,044	11,412	8,556	5,518	6,616	+19.9
Totals.....	146,763	153,124	170,767	149,902	172,014	+14.8

11.—Sales of Farm Implements and Equipment, by Province, 1957 and 1958

(Values at Wholesale Prices)

Province or Region	1957		1958		Percentage Change 1957-58
	Amount	P.C. of Total	Amount	P.C. of Total	
	\$		\$		
Atlantic Provinces.....	5,295,899	3.5	5,797,262	3.4	+ 9.5
Quebec.....	23,841,645	16.0	26,468,820	15.4	+11.0
Ontario.....	39,173,706*	25.8	43,058,467	25.0	+ 9.9
Manitoba.....	14,713,559	9.9	17,694,803	10.3	+20.3
Saskatchewan.....	32,137,391	21.5	36,905,208	21.5	+14.8
Alberta.....	30,934,663	20.7	37,943,736	22.0	+22.7
British Columbia.....	3,804,730	2.6	4,146,080	2.4	+ 9.0
Totals.....	149,901,593*	100.0	172,014,376	100.0	+14.8

Sales Financing.—Instalment financing undertaken by sales finance companies in 1958 continued the decline shown in the previous year from the record high of 1956. The decrease was evident in both the consumer and commercial sectors and was attributable mainly to the lower amount of paper purchased covering the sales of new passenger and commercial vehicles. It is noteworthy that balances outstanding at the end of 1958 were at their lowest level since 1955.

12.—Retail Instalment Paper Purchased and Balances Outstanding, by Province and by Class of Goods, 1955-58

(Millions of Dollars)

Province and Class of Goods	Paper Purchased				Balances Outstanding Dec. 31—			
	1955	1956	1957	1958	1955	1956	1957	1958
Province								
Atlantic Provinces.....	86	98	83	..	68	81	76	..
Quebec.....	225	298	296	..	187	248	263	..
Ontario.....	404	500	454	..	317	417	416	..
Manitoba.....	34	44	51	..	27	37	46	..
Saskatchewan.....	32	43	48	..	30	35	39	..
Alberta.....	103	138	139	..	89	115	123	..
British Columbia ¹	93	127	120	..	73	102	104	..
Totals, Retail Financing.....	977	1,248	1,191	1,135	791	1,035	1,067	1,026
Class of Goods								
Consumer Goods.....	759	925	900	870	599	756	779	763
New passenger cars.....	307	409	385	336	264	364	635	588
Used passenger cars.....	297	337	344	333	214	249		
Radio and television sets.....	59	58	171	201	47	47	144	180
Household appliances.....	58	58			45	47		
Furniture.....	15	21	42	17	12	17	288	257
Other.....	23	42			17	32		
Commercial and Industrial.....	218	323	291	265	192	279	288	257
New commercial vehicles.....	73	112	95	70	67	98	135	111
Used commercial vehicles.....	50	52	53	48	39	40		
Other.....	95	159	143	147	86	141	153	146

¹ Includes the Yukon and Northwest Territories.

Consumer Credit.—Balances outstanding on credit extended to consumers by retail stores and certain financial institutions are increasing very rapidly. Although the financial institutions included in the survey do not cover all sources of consumer credit, returns from the selected holders indicate that balances outstanding on credit extended to individuals for the purchase of consumer goods and services have more than doubled in the past eight years. The figures of Table 13 do not include credit extended for commercial purposes.

13.—Balances Outstanding on Retail Trade Credit and Loans Extended to Individuals for Non-business Purposes by Certain Financial Institutions, 1951-58

(Millions of Dollars)

Year	Retail Trade Credit	Sales Finance Companies	Small Loan Companies	Chartered Banks	Credit Unions	Life Insurance Companies Policy Loans
1951.....	406	186	114	435	76	199
1952.....	552	373	148	506	94	213
1953.....	624	516	176	585	129	225
1954.....	685	492	215	612	151	240
1955.....	751	599	279	788	174	250
1956.....	798	756	356	759	219	270
1957.....	826	780	362	691	248	295
1958.....	860	768	400	842	313	304

Retail Credit.—The estimated amount of credit granted by retail stores during 1958 was slightly below the 1957 total. At the same time, accounts outstanding at Dec. 31, 1958 were slightly higher than at the end of 1957 and thus remained over the billion-dollar mark. This figure is the amount of accounts receivable on the books of retail establishments at the end of the year and does not include the instalment credit extended by retailers but sold to sales finance companies.

14.—Retail Credit 1952-58, and by Quarter and Kind of Business, 1958

Period and Kind of Business	Sales				Accounts Receivable (at end of period)		
	Cash	Instalment	Charge	Total	Instalment	Charge	Total
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
1952.....	7,418.4	1,421.5	2,692.2	11,532.1	246.2	451.3	697.5
1953.....	7,808.2	1,585.5	2,734.2	12,127.9	287.8	483.6	771.4
1954.....	7,887.9	1,431.5	2,746.4	12,065.8	326.6	492.7	819.3
1955.....	8,348.3	1,705.6	3,058.0	13,111.9	381.8	542.8	924.6
1956.....	9,147.4	1,855.0	3,295.1	14,297.5	414.9	566.6	981.5
1957.....	9,547.3	1,882.1	3,396.8	14,826.4	485.1	529.1	1,014.2
1958 ^a	10,038.9	1,704.4	3,508.7	15,252.0	495.5	566.4	1,061.9
1958							
January-March.....	2,177.0	369.8	765.2	3,312.0	450.5	483.2	933.7
April-June.....	2,592.6	481.6	884.3	3,958.5	452.8	523.5	976.3
July-September.....	2,467.0	423.9	886.5	3,777.4	458.8	547.9	1,006.7
October-December.....	2,802.3	429.1	972.7	4,204.1	495.5	566.4	1,061.9
Department stores.....	826.3	294.0	221.2	1,341.5	223.5	58.3	281.8
Motor vehicle dealers.....	864.3	950.8	575.7	2,390.8	17.6	76.8	94.4
Men's clothing stores.....	175.9	12.7	47.1	235.7	4.4	11.1	15.5
Family clothing stores.....	146.6	29.2	46.0	221.8	11.8	10.0	21.8
Women's clothing stores.....	202.3	9.1	54.9	266.3	2.6	10.3	12.9
Hardware stores.....	197.0	14.0	105.6	316.6	6.8	24.6	31.4
Furniture, appliance and radio stores..	190.6	263.1	110.1	563.8	167.8	27.0	194.8
Jewellery stores.....	77.7	30.8	23.8	132.3	16.0	8.0	24.0
Grocery and combination stores (independent).....	1,351.9	—	379.3	1,731.2	—	35.2	35.2
General stores.....	448.6	—	176.8 ¹	625.4	—	29.0 ¹	29.0
Fuel dealers.....	46.0	4.0	264.2	314.2	1.7	47.8	49.5
Garages and filling stations.....	644.2	—	328.6 ¹	970.8	—	28.8 ¹	28.8
All other trades.....	4,867.5	91.5	1,182.6	6,141.6	43.0	199.8	242.8

¹ Includes instalment.

Subsection 3.—Service Establishments

Service establishments as defined in the Census of Distribution included all those places of business where the major part of gross income (annual turnover) was derived from the rendering of services as opposed to the sale of merchandise. The following types of service were covered: amusement and recreation such as motion picture theatres and producers, and bowling alleys; personal services such as laundries and dry-cleaning plants, barber shops and shoe repair shops; certain business services such as advertising agencies and window display services; repair services such as automobile repair, radio repair and watch repair; burial services; photography, commercial and portrait; hotels and tourist camps; and other services such as cold storage locker rentals and taxis.

Summary statistics of the detailed coverage in 1951 are given in the 1955 Year Book at pp. 974-977. Annual data for certain services only are included here.

Theatres.—The receipts of motion picture theatres increased steadily up to 1953 when they amounted to \$108,603,966, but thereafter decreased each year to \$81,393,078 in 1958. Drive-in theatres, the most recent of theatre developments, appear to have reached their peak in 1954 with receipts of \$6,316,947; receipts amounted to \$6,254,410 in 1958.

15.—Motion Picture Theatres and Receipts, by Province, 1955-58

NOTE.—Figures for 1955 and 1956 include regular and drive-in theatres together with community organizations providing motion picture entertainment such as churches, lodges, boards of trade, etc., but exclude halls serviced by itinerant operators; figures for 1957 and 1958 cover regular and drive-in theatres only. Receipts are exclusive of amusement taxes.

Province	1955		1956		1957		1958	
	No.	\$	No.	\$	No.	\$	No.	\$
Newfoundland.....	128	1,564,753	130	1,278,641	65	1,065,958	62	977,797
Prince Edward Island.....	21	446,187	17	329,699	13	225,195	11	2,835,004
Nova Scotia.....	99	3,972,238	96	3,252,641	80	2,730,072	75	
New Brunswick.....	80	2,616,167	76	2,371,715	65	2,053,586	61	1,827,544
Quebec.....	632	19,987,471	563	19,663,010	407	18,883,777	393	19,069,521 ¹
Ontario.....	641	35,983,815	589	34,154,413	526	32,346,718	506	32,436,912
Manitoba.....	201	4,802,826	185	4,035,086	148	3,689,372	142	3,781,246
Saskatchewan.....	423	5,549,273	300	5,034,855	229	4,421,336	212	4,089,415
Alberta.....	324	9,070,426	305	8,168,863	229	7,578,434	215	7,392,084
British Columbia.....	259	9,826,031	241	9,227,972	183	9,217,040	177	8,983,555
Canada.....	2,808	93,819,187	2,592	87,516,895	1,945	82,211,488	1,854	81,393,078

¹ Includes the Yukon and Northwest Territories.

16.—Summary Statistics of Motion Picture Theatre Operations, 1957 and 1958

Year and Item		Regular Theatres	Drive-in Theatres	Total
1957				
Establishments.....	No.	1,716	229	1,945
Receipts (excluding taxes).....	\$	76,486,177	5,725,311	82,211,488
Amusement taxes.....	\$	7,815,204	520,155	8,335,359
Paid admissions.....	No.	146,755,828	9,945,630	156,701,458
1958				
Establishments.....	No.	1,622	232	1,854
Receipts (excluding taxes).....	\$	75,138,668	6,254,410	81,393,078
Amusement taxes.....	\$	6,950,961	504,281	7,455,242
Paid admissions.....	No.	136,334,967	10,148,774	146,483,741

Motion Picture Production.—Table 17 shows the operations of private firms in the production and printing of motion picture films and film strips for industry, government, education, entertainment, etc. Films are also produced by government agencies

but information concerning such production is, of course, not available. In addition, five firms in other business categories produced films in 1958 (one feature, seven television and 18 other non-theatrical, 288 newsreel and 21 commercial advertising) which brought them a revenue of \$101,000.

17.—Summary Statistics of Motion Picture Production by Private Firms, 1952-59

Year	Firms	Employees	Salaries and Wages	Gross Revenue		
				Production	Printing and Laboratory	Other Revenue
	No.	No.	\$	\$	\$	\$
1952.....	30	386	1,006,918	1,331,393	1,274,137	..
1953.....	32	387	1,150,890	1,592,779	1,230,493	..
1954.....	45	478	1,549,233	2,106,131	1,456,405	1,328,021
1955.....	46	445	1,460,421	2,456,038	1,051,673	512,727
1956 ¹	59	1,127	2,483,910	3,726,557	2,095,985	423,899
1957.....	53	1,216	2,758,560	4,471,710	2,978,626	469,369
1958.....	52	1,133	2,770,375	3,902,780	3,344,948	421,975
1959.....	54	1,365	3,471,347	5,085,690	3,229,240	389,480

¹ Figures from 1956 include laboratories with no motion picture production; these are not included in previous years.

Table 18 shows types of film produced by private industry, classified by major producing region, and by government agencies during 1958 and 1959. Of the total of 514 films of five minutes or longer produced by private industry in 1959, 40 television and 15 other non-theatrical films were adaptations or language versions of original films; 11 were made for other than Canadian sponsors. Of the government films, 20 theatrical shorts, 10 television and 61 other non-theatrical films of five minutes or longer were adaptations or language versions of original films and one film was produced for a sponsor from outside Canada.

Private industry and government agencies together printed 47,978,205 feet of 16mm. film in black and white, 7,802,333 feet of 16mm. film in colour, and 21,200,275 feet of 35mm. film in black and white.

18.—Private Industry and Government Motion Picture Production, by Type of Film, 1958 and 1959

Year and Type	Private Industry				Government	Private and Government
	Quebec	Ontario	Other Provinces	Total		
	No.	No.	No.	No.	No.	No.
1958						
Entertainment, Documentary and Instructional Films—						
Five Minutes or Longer—						
Theatrical features.....	—	2	—	2	—	2
Theatrical shorts.....	9	3	3	15	19	34
Non-theatrical television.....	104	108	—	212	55	267
Other non-theatrical.....	29	160	31	220	188	408
Less than Five Minutes.....	6	4	2	12	46	58
Publicity, News and Other Films—						
Commercial advertising for television.....	469	1,316	255	2,040	—	2,040
Other commercial advertising.....	1	8	8	17	—	17
Non-commercial advertising for television....	1	45	9	55	—	55
Other non-commercial advertising.....	—	4	2	6	6	12
Trailers for television.....	6	1	1	8	1	9

**18.—Private Industry and Government Motion Picture Production, by Type of Film,
1958 and 1959—concluded**

Year and Type	Private Industry				Govern- ment	Private and Govern- ment
	Quebec	Ontario	Other Provinces	Total		
1958	No.	No.	No.	No.	No.	No.
Publicity, News and Other Films—concl.						
Other trailers.....	1	4	651	656	—	656
Newsclips for television.....	240	7	8	255	50	305
Other newsclips.....	—	3	—	3	15	18
Newsreel stories and ciné-magazines for tele- vision.....	78	31	6	115	4	119
Other newsreel stories and ciné-magazines....	105	—	—	105	52	157
Slidefilms (filmstrips)—						
Silent.....	12	3	—	15	—	15
Sound (with a record).....	—	12	—	12	—	12
Film titles.....	—	—	—	—	—	—
Other films.....	—	592	4	596	—	596
1959						
Entertainment, Documentary and Instruc- tional Films—						
Five Minutes or Longer—						
Theatrical features.....	—	—	—	—	—	—
Theatrical shorts.....	1	1	—	2	28	30
Non-theatrical television.....	138	165	2	305	60	365
Other non-theatrical.....	46	139	22	207	179	386
Less than Five Minutes.....	2	35	8	45	11	56
Publicity, News and Other Films—						
Commercial advertising for television.....	423	1,374	367	2,164	—	2,164
Other commercial advertising.....	—	31	3	34	—	34
Non-commercial advertising for television....	6	52	4	62	6	68
Other non-commercial advertising.....	—	8	6	14	12	26
Trailers for television.....	106	—	—	106	30	136
Other trailers.....	—	4	593	597	1	598
Newsclips for television.....	250	146	20	416	30	446
Other newsclips.....	—	—	—	—	2	2
Newsreel stories and ciné-magazines for tele- vision.....	29	79	15	123	—	123
Other newsreel stories and ciné-magazines....	105	61	—	166	48	214
Slidefilms (filmstrips)—						
Silent.....	3	8	—	11	33	44
Sound (with a record).....	—	7	—	7	3	10
Film titles.....	3	46	7	56	1	57
Other films.....	—	585	—	585	—	585

Power Laundries, Dry-Cleaning and Dyeing Plants.—A record of the value of work performed by power laundries and cleaning and dyeing establishments during the years 1954-58 is given in Table 19, together with other basic data on operation.

**19.—Summary Statistics of Power Laundries, Dry-Cleaning and Dyeing Plants 1954-58,
and by Province 1958**

Year	Plants	Em- ployees	Salaries and Wages	Cost of Materials	Value of Work Performed
POWER LAUNDRIES					
	No.	No.	\$	\$	\$
1954.....	299	13,754	26,635,646	4,665,671	50,513,242
1955.....	306	13,991	28,078,112	4,994,234	54,199,647
1956.....	308	14,514	30,090,800	5,738,133	58,873,728
1957.....	320	14,557	31,869,671	5,746,805	63,106,386
1958.....	322	14,258	32,761,909	6,048,982	65,350,103

19.—Summary Statistics of Power Laundries, Dry-Cleaning and Dyeing Plants 1954-58, and by Province 1958—concluded

Year and Province or Territory	Plants	Em- ployees	Salaries and Wages	Cost of Materials	Value of Work Performed
POWER LAUNDRIES—concluded					
Province, 1958	No.	No.	\$	\$	\$
Newfoundland and Prince Edward Island.....	5	122	200,450	47,541	522,636
Nova Scotia.....	13	445	774,181	152,136	1,506,689
New Brunswick.....	11	383	643,952	150,515	1,296,048
Quebec.....	79	4,387	9,496,242	1,749,686	19,035,335
Ontario.....	124	5,147	11,787,249	2,166,367	22,966,623
Manitoba.....	9	448	1,008,751	226,040	2,128,363
Saskatchewan.....	7	311	669,336	154,651	1,380,455
Alberta.....	26	905	2,081,721	405,468	4,642,138
British Columbia, Yukon and N.W.T.....	48	2,110	6,100,027	996,578	11,871,816
Canada, 1958.....	322	14,258	32,761,909	6,048,982	65,350,103
DRY-CLEANING AND DYEING PLANTS					
	No.	No.	\$	\$	\$
1954.....	1,107	15,485	31,512,711	7,535,432	67,222,831
1955.....	1,205	15,909	32,873,802	7,930,290	70,733,946
1956.....	1,338	16,939	35,620,930	9,157,172	78,527,203
1957.....	1,381	16,701	38,288,440	9,710,880	84,281,509
1958.....	1,417	16,721	39,518,187	10,126,668	87,194,590
Province, 1958					
Newfoundland and Prince Edward Island.....	18	256	614,454	134,000	1,203,586
Nova Scotia.....	48	565	1,165,477	325,177	2,592,100
New Brunswick.....	39	376	711,777	209,596	1,684,790
Quebec.....	262	3,278	7,608,725	2,057,709	16,961,222
Ontario.....	615	7,404	17,550,250	4,527,586	39,355,561
Manitoba.....	60	1,319	3,245,780	726,864	6,228,228
Saskatchewan.....	93	677	1,579,973	430,246	3,774,040
Alberta.....	147	1,510	3,557,334	901,998	8,036,270
British Columbia, Yukon and N.W.T.....	135	1,336	3,486,417	813,492	7,358,793
Canada, 1958.....	1,417	16,721	39,518,187	10,126,668	87,194,590

Advertising Agencies.—Table 20 records the growth of business done by advertising agencies during 1958 as compared with the four previous years.

20.—Summary Statistics of Advertising Agencies, 1954-58

Item	1954	1955	1956	1957	1958
Billings..... \$	156,163,289	177,240,355	204,580,522	226,083,949	237,654,038
Commissionable billings..... \$	154,467,028	174,924,772	201,797,434	222,085,288	235,789,205
Other..... \$	1,696,261	2,315,583	2,783,088	4,058,661	5,864,833
Gross revenue..... \$	24,579,169	27,689,654	32,203,754	35,757,762	38,073,427
Distribution of Billings—					
Publications..... p.c.	56.4	53.3	52.6	51.6	49.3
Production, artwork, etc..... p.c.	17.3	15.1	15.3	15.1	14.4
Radio..... p.c.	15.4	11.9	10.3	10.0	10.5
Television..... p.c.	5.5	13.5	16.6	18.3	20.5
Other visual..... p.c.	4.5	5.5	4.4	4.4	4.7
Other..... p.c.	0.9	0.7	0.8	0.6	0.6

Hotels.—In 1958 there were 5,088 hotels in operation in Canada, 4,194 of them full-year hotels and 894 seasonal hotels. Table 21 shows the provincial distribution of these establishments, together with the sources of their revenue.

21.—Hotels and Their Receipts, by Source 1954-58 and by Province 1958

Year and Province	Hotels	Rooms	Receipts				
			Rooms	Meals	Beer, Wine and Liquor	All Other Sources	Total
	No.	No.	\$'000	\$'000	\$'000	\$'000	\$'000
1954.....	5,208	148,890	94,094	70,829	204,555	36,378	405,856
1955.....	5,081	147,812	96,273	72,236	211,415	35,385	415,309
1956.....	5,067	149,625	104,453	78,169	223,398	35,811	441,831
1957.....	5,151	151,517	110,505	84,049	238,210	37,305	470,069
1958.....	5,088	151,362	111,174	87,550	243,695	37,876	480,295
Province, 1958							
Newfoundland.....	51	975	1,070	751	1,063	281	3,165
Prince Edward Island.....	22	635	381	308	—	54	743
Nova Scotia.....	127	3,619	3,135	2,765	352	566	6,818
New Brunswick.....	89	2,994	2,168	1,462	—	498	4,128
Quebec.....	1,523	41,134	28,379	22,902	59,400	8,385	119,066
Ontario.....	1,477	47,407	36,601	34,380	69,715	12,403	153,099
Manitoba.....	288	7,908	5,265	3,655	21,973	2,221	33,114
Saskatchewan.....	518	11,536	6,009	3,705	25,879	2,830	38,423
Alberta.....	441	14,800	12,236	6,904	30,105	5,195	54,440
British Columbia ¹	552	20,354	15,930	10,718	35,208	5,443	67,299
Canada, 1958.....	5,088	151,362	111,174	87,550	243,695	37,876	480,295

¹ Includes the Yukon and Northwest Territories.

Section 2.—The Marketing of Agricultural Products

A special article covering the general movement of farm-produced foods from producer to consumer, with the exception of the grain trade and livestock, appears in the 1956 Year Book, pp. 917-922. Grain and livestock marketings are dealt with in detail in Subsections 1 and 2 following.

Subsection 1.—Grain Trade

Marketing Problems and Policies, 1957-58

Exports of the five major Canadian grains in the crop year 1957-58 were some 14 p.c. above the 1956-57 level while production, marketings and commercial and farm carryover each registered decreases. Growing conditions were generally excellent in Quebec, Ontario and British Columbia while dry weather prevailed in the Maritime and Prairie Provinces. Although harvesting conditions were reasonably satisfactory, the impact of summer drought in the Prairie Provinces caused production of most small grains to fall below 1956 levels. Marketings of wheat, oats and barley continued under the compulsory crop year pools system of the Canadian Wheat Board. All grains in Eastern Canada and rye and flaxseed in Western Canada continued to be traded on the open market.

On July 23, 1957, the Canadian Wheat Board announced the main features of the delivery quota policy for the 1957-58 crop year. As in the preceding crop year, an initial unit quota of 100 units was to be effective at local delivery stations. A permit holder was entitled to deliver a maximum of 300 bu. of wheat (other than Durum) or 800 bu. of oats or 500 bu. of barley or 500 bu. of rye or any combination of these grains which, when calculated on the unit basis, did not exceed 100 units. Deliveries of Durum wheat and flaxseed were subject to an initial quota of 5 bu. per seeded acre, effective Aug. 1. The initial unit quota was followed by general delivery quotas, based upon bushels per specified acreage.

On Feb. 20, 1957 the Board had announced that commencing with the 1957-58 crop year cultivated grasses and legumes grown as forage crops would be included in the specified acreage total for general quota delivery purposes. Therefore, effective Aug. 1, 1957, the "specified acreage" for delivery purposes consisted of each permit holder's acreage seeded to wheat (other than Durum), oats, barley and rye as well as summerfallow and eligible acreage seeded to cultivated grasses and forage crops. The final quota summary for the 2,071 shipping points in the Western Division showed that at July 31, 1958 a total of 1,718 points were on a quota of 7 bu. per specified acre, 321 were on a 6-bu. quota, while 32 stations were reported as "closed". Two supplementary delivery quotas on Durum wheat were authorized during the crop year, with the second authorization of 3 bu. effective June 2, raising the total delivery quota on Durum wheat to 11 bu. per seeded acre, with a minimum delivery of 400 bu. During the crop year a number of supplementary delivery quotas were issued on barley, rye and flaxseed, with the flaxseed quota, based on seeded acreage, being declared open as at Nov. 7, 1957. The amount of grain marketed under these special authorizations was, of course, in addition to the quantities of oats, barley and rye which producers chose to deliver under the initial and general quota policies.

Total marketings of the five major grains in Western Canada during 1957-58 amounted to 576,000,000 bu., representing a decrease of 2 p.c. from the comparable 1956-57 total of 585,400,000 bu. but 1 p.c. greater than the ten-year (1946-47—1955-56) average of 571,100,000 bu. Combined exports of the same grains, including wheat flour, rolled oats and oatmeal, malt and pot and pearl barley in grain equivalent, amounted to 445,900,000 bu., 14 p.c. greater than the 1956-57 comparable total of 391,600,000 bu. and 20 p.c. more than the 1946-47—1955-56 average of 371,300,000 bu. Carryover stocks of the five principal grains in all positions at July 31, 1958 were estimated at 928,200,000 bu., 17 p.c. less than the 1957 figure of 1,124,300,000 bu. but almost double the ten-year average of 465,000,000 bu.

22.—Supply and Disposition of Canadian Grain, Crop Years Ended July 31, 1957 and 1958

(Millions of bushels)

Item	Wheat	Oats	Barley	Rye	Flaxseed
Crop Year 1956-57					
Carryover, Aug. 1, 1956.....	579.6	119.1	110.9	15.7	3.0
Production in 1956.....	573.0	524.5	269.1	8.4	35.0
Imports ¹	0.1	2	2	2	2
Totals, Supply.....	1,152.8	643.6	380.0	24.2	38.0
Exports ²	264.4 ^a	18.7	81.5	5.4	21.6
Domestic use ⁴	154.8 ^c	398.7	155.7	4.6	8.8
Totals, Disposition.....	419.2	417.4	237.2	10.0	30.4
Crop Year 1957-58					
Carryover, Aug. 1, 1957.....	733.5	226.2	142.8	14.2	7.6
Production in 1957.....	385.5	380.6	216.0	8.5	19.2
Imports ¹	2	2	0.1	2	2
Totals, Supply.....	1,119.1	606.8	358.8	22.7	26.8
Exports ²	320.3	26.2	80.3	5.4	13.7
Domestic use ⁴	159.3	425.7	160.4	7.2	7.5
Totals, Disposition.....	479.6	451.9	240.7	12.6	21.1
Carryover, July 31, 1958.....	639.5	154.9	118.2	10.1	5.7

¹ Import data for wheat, oats, barley and rye, respectively, include flour in terms of wheat, rolled oats and oatmeal in terms of oats, malt and pot and pearl barley in terms of barley and rye flour in terms of rye.

² Less than 50,000 bu. ³ Export data for wheat, oats and barley, respectively, include bagged seed wheat, wheat flour in terms of wheat, rolled oats and oatmeal in terms of oats and malt and pot and pearl barley in terms of barley.

⁴ Includes human food, seed requirements, industrial use, loss in handling and animal feed.

Wheat.—Supply and Disposition.—Stocks of wheat on hand at the beginning of the 1957-58 crop year were at the record level of 733,500,000 bu., 27 p.c. above those of the preceding year. Total crop year supplies, consisting of carryover stocks plus the 1957 production of 385,500,000 bu. and imports of 1,000 bu., amounted to some 1,119,100,000 bu. and were exceeded only by the 1956-57 record level of 1,152,800,000 bu. Carryover stocks at the end of the 1957-58 crop year, reflecting smaller total supplies as well as increased exports and domestic disappearance, amounted to 639,500,000 bu., a decline of 13 p.c. from the carryover at July 31, 1957.

**23.—Production, Imports, Exports and Domestic Use of Wheat, Crop Years Ended
July 31, 1952-58**

(Millions of bushels)

Item	1951-52	1952-53	1953-54	1954-55	1955-56	1956-57	1957-58
Carryover, Aug. 1.....	189.2	217.2	383.2	618.7	536.7	579.6	733.5
Production.....	553.7	702.0	634.0	332.0	519.2	573.0	385.5
Imports ¹	2	2	0.5	0.2	2	0.1	2
Totals, Supply.....	742.9	919.2	1,017.7	950.8	1,055.9	1,152.8	1,119.1
Exports ¹	355.8	385.5	255.1	251.9	312.3 ²	264.4 ²	320.3
Domestic use.....	169.9	150.5	143.9	162.2	164.1 ²	154.8 ²	159.3
Totals, Disposition.....	525.7	536.0	399.0	414.1	476.4	419.2	479.6
Carryover, July 31.....	217.2	383.2	618.7	536.7	579.6	733.5	639.5

¹ Includes bagged seed wheat and wheat flour in terms of wheat.

² Less than 50,000 bu.

Price and Marketing Arrangements.—Marketing of western Canadian wheat during the crop year 1957-58 was again conducted by the Canadian Wheat Board on a one-year pool basis, with the initial payment set at \$1.40 per bu., basis No. 1 Northern in store Fort William-Port Arthur or Vancouver. The initial payment for No. 1 C.W. Amber Durum was established at \$1.50 per bu. No adjustment payments on the 1957-58 deliveries were made during the crop year but on Feb. 25, 1959 an interim payment on the 1957-58 pool account for wheat was announced, amounting to 10 cents per bu. for all grades except high-quality milling grades of Durum for which the interim payment was 15 cents. The full amount of this payment was some \$38,800,000. The final payment on the 1957-58 pool was announced on June 5, 1959, and averaged 8.989 cents per bu. on farmers' deliveries of 376,900,000 bu. Prior to deductions of the Prairie Farm Assistance Act levy, the net price realized by producers in the 1957-58 pool for No. 1 Northern wheat, basis in store Fort William-Port Arthur or Vancouver, was \$1.62120 per bu.

The crop year 1957-58 coincided with the second year of the third three-year International Wheat Agreement. Under its provisions Canada had a guaranteed export quota of 100,100,000 bu. for 1957-58 and, according to the final report on the year's transactions, Canadian sales under the Agreement totalled 78,000,000 bu. Sales under the Agreement were quite widely distributed, with 24 of the 42 importing countries included in the pact purchasing wheat and/or flour from Canada. The larger purchasers from Canada under the Agreement were as follows: the Federal Republic of Germany, 25,500,000 bu.; the Netherlands, 15,900,000 bu.; Japan, 13,200,000 bu.; Switzerland, 6,600,000 bu.; Norway, 3,400,000 bu.; Belgium, 2,300,000 bu.; and the Philippines, 2,300,000 bu. The greater part of Canada's wheat trade during 1957-58 was carried on in Class II wheat (i.e., wheat exported outside the provisions of the International Wheat Agreement). The United Kingdom remained the leading importer of Class II Canadian wheat, shipments to that country amounting to 90,300,000 bu. of wheat as grain and the equivalent of an additional 13,700,000 bu. in the form of wheat flour. Total Canadian exports of wheat and wheat

flour combined amounted to 320,300,000 bu., an increase of 21 p.c. over the 264,400,000 bu. exported in 1956-57. The 1957-58 exports consisted of 279,900,000 bu. of wheat as grain and the equivalent of 40,400,000 bu. in the form of wheat flour. Total domestic (commercial and farm) disappearance of wheat in 1957-58 amounted to 159,300,000 bu. and exceeded both the 1956-57 figure of 154,800,000 bu. and the ten-year (1946-47—1955-56) average of 150,700,000 bu. The carryover at July 31, 1958 amounted to 639,500,000 bu. and represented a decline of 13 p.c. from the record 1957 total of 733,500,000 bu.

During the crop year 1957-58 domestic sales of all classes of wheat were made at the same prices as those prevailing for wheat sold under the International Wheat Agreement. Class II prices for all grades of wheat, except Durum, coincided with the IWA and domestic quotations. The average Class II price received for No. 1 C.W. Amber Durum during the crop year was only $1\frac{1}{4}$ cents per bu. above the comparable IWA and domestic average price of \$1.94 $\frac{1}{2}$.

Other Grains.—*Supply and Disposition.*—Data re supply and disposition of the major Canadian grains for the crop years 1957-58 and 1956-57 are given in Table 22. With the exception of rye, carryover stocks of each of the five principal Canadian grains were higher in 1957 than in 1956. The effect of larger carryovers, however, was more than offset by decreases in production, with rye again being the exception. In the case of rye, the decline in carryover was greater than the increase in production. The combined total estimated domestic supplies of wheat, oats, barley, rye and flaxseed in 1957-58 amounted to 2,134,000,000 bu., representing a decline of 5 p.c. from the comparable 1956-57 figure of 2,239,000,000 bu.

Largely reflecting a decrease in flaxseed exports which generally offset an increase in the movement of oats, the combined export movement of oats, barley, rye and flaxseed in the crop year 1957-58 amounted to 125,600,000 bu. compared with the 1956-57 level of 127,200,000 bu. The export movement of Canadian oats, including rolled oats and oatmeal, climbed from 18,700,000 bu. in 1956-57 to 26,200,000 bu. in 1957-58. The 80,300,000 bu. of barley and its products exported in 1957-58 represented a decrease of 2 p.c. from the 1956-57 level but was still the fifth largest on record. Exports of Canadian rye in the crop year 1957-58, at 5,400,000 bu., showed relatively no change from the 1956-57 total. Shipments of Canadian flaxseed to overseas destinations declined sharply from the 1956-57 record level of 21,600,000 bu. to a total of 13,700,000 bu. in 1957-58.

Reflecting a combination of smaller total supplies and increased disappearance (exports plus domestic use) of both oats and barley in 1957-58, considerable reductions occurred in July 31 carryover stocks of each of these grains. Although exports of rye in 1957-58 were relatively unchanged from the preceding year, the effect of smaller total supplies and increased domestic disappearance caused a substantial decline in July-end carryover stocks of this grain. Sharply reduced supplies of flaxseed more than offset declines in both exports and domestic disappearance and as a result the July 31, 1958 carryover of this crop was also below the 1957 level.

Price and Marketing Arrangements.—Marketing of western Canadian oats and barley was again carried on through compulsory crop-year pools, administered by the Canadian Wheat Board. The initial payment for oats in the 1957-58 crop year, basis No. 2 C.W., in store Fort William-Port Arthur, was 60 cents per bu., compared with 65 cents per bu. in 1956-57. The initial payment for barley, basis No. 3 C.W. Six-Rew, in store Fort William-Port Arthur, at 96 cents per bu., was unchanged from that of 1956-57. No interim payments were made on either grain during the crop year but final payments were announced on Mar. 25, 1959. The final payment on the 116,400,000 bu. of barley delivered

to the 1957-58 pool averaged 5.258 cents per bu. after deduction of payment expenses and the 1-p.c. PFAA levy. Total prices (basis in store Fort William-Port Arthur) realized by producers for representative grades after deducting carrying charges in country and terminal elevators, Board administrative costs, etc., but before deducting the 1-p.c. PFAA levy were \$1.03341 per bu. for No. 3 C.W. Six-Row barley, and \$0.89108 per bu. for No. 1 Feed barley. Final payment on the 57,800,000 bu. of oats delivered to the 1957-58 pool averaged 3.582 cents per bu. Total prices realized by producers for representative grades, on the same basis as for barley, were \$0.67369 per bu. for No. 2 C.W. and \$0.58164 per bu. for No. 1 Feed oats.

Some 7,400,000 bu. of rye and 15,300,000 bu. of flaxseed were delivered by farmers in Western Canada in 1957-58, both of these grains being sold on the open market. In Eastern Canada, where commercial grain production is on a much smaller scale, all grain continued to be sold on the open market.

Miscellaneous Grain Trade Statistics

Grain Handled at Eastern Elevators.—The volume of grain handled at eastern elevators in the 1957-58 crop year represented only a slight decline from the preceding year. Total receipts of the five major grains amounted to 451,200,000 bu., 2 p.c. lower than in 1956-57. The decrease largely resulted from reduced receipts of flaxseed as well as smaller receipts of oats, barley and rye. Total shipments amounted to 456,400,000 bu., 3 p.c. greater than in 1956-57, and reflected a substantial increase in shipments of wheat.

24.—Canadian Grain Handled at Eastern Elevators, Crop Years Ended July 31, 1954-58

NOTE.—Figures for the crop years ended 1922-53 are given in the corresponding table of previous Year Books beginning with the 1931 edition.

Item and Crop Year	Wheat	Oats	Barley	Rye	Flaxseed	Total Grain
	bu.	bu.	bu.	bu.	bu.	bu.
Receipts—						
1953-54.....	220,955,136	41,756,777	84,232,908	1,325,338	10,431,224	367,701,383
1954-55.....	293,901,551	49,141,076	111,800,738	14,346,219	12,975,483	481,165,067
1955-56.....	333,237,962	43,029,962	72,647,433	18,472,661	21,464,557	488,852,575
1956-57.....	294,264,535	48,311,339	81,483,171	2,865,332	33,507,140	460,431,517
1957-58.....	302,934,930	47,087,691	80,972,437	2,807,022	17,419,477	451,221,557
Shipments—						
1953-54.....	211,822,877	42,825,733	86,875,792	1,944,955	10,712,103	354,181,460
1954-55.....	292,069,170	46,730,624	111,432,900	14,239,919	13,047,259	477,519,872
1955-56.....	350,307,242	41,909,092	70,485,188	18,632,238	21,415,998	502,749,758
1956-57.....	277,177,635	48,825,598	81,434,386	3,197,075	33,261,860	443,896,554
1957-58.....	307,832,795	46,940,137	81,268,949	2,914,724	17,473,880	456,430,485

Grain Inspections.—The volume of Canadian wheat, oats, barley, rye, flaxseed, corn, buckwheat and mixed grain and a small quantity of United States grain inspected by the Board of Grain Commissioners for Canada in the crop year 1957-58 amounted to 602,500,000 bu. which was 2 p.c. above the 1956-57 total of 591,200,000 bu. Quantities of the various grains inspected at eastern and western points, as well as inspections of soybeans, beans, peas, sample grain, screenings, sunflower seed, rapeseed, mustard seed and safflower seed appear in Table 25.

25.—Quantities of Grain and Other Field Crops Inspected, Crop Years Ended July 31, 1957 and 1958

Crop	1956-57			1957-58		
	Western Division	Eastern Division	Total	Western Division	Eastern Division	Total
	bu.	bu.	bu.	bu.	bu.	bu.
Wheat.....	367,348,789	6,966,845	374,315,634	377,576,932	7,249,939	384,826,871
Spring wheat.....	364,992,757	—	364,992,757	377,169,210	10,063	377,179,273
Winter wheat.....	2,356,032	6,966,845	9,322,877	407,722	7,239,876	7,647,598
Oats.....	57,599,764	59,086	57,658,850	63,953,935	779,377	64,733,312
Barley.....	117,597,585	332,450	117,930,035	121,364,111	362,171	121,726,282
Rye.....	6,160,403	46,860	6,207,263	6,957,704	63,265	7,020,969
Flaxseed.....	29,819,241	3,000	29,822,241	19,277,333	—	19,277,333
Corn.....	176,534	4,200,371	4,376,905	146,454	4,260,443	4,406,897
Buckwheat.....	231,653	40,736	272,389	149,612	12,500	162,112
Mixed grain.....	390,042 ¹	—	390,042	240,236 ¹	6,000	246,236
Soybeans.....	—	5,376,165	5,376,165	—	6,111,040	6,111,040
Beans.....	—	382,615	382,615	—	337,361	337,361
Peas.....	cars 234	—	s	326,509	—	326,509
Sample grain.....	2	—	s	—	—	—
Screenings.....	471	—	s	cars 443	—	s
Sunflower seed.....	—	—	—	2	—	s
Rapeseed ¹	bu. 4,724,920	163,946	4,888,875	bu. 7,522,760	—	7,522,760
Mustard seed ¹	1,176,775	—	1,176,775	811,795	—	811,795
Safflower seed ¹	—	—	—	116,635	—	116,635
U.S.A. flaxseed.....	—	43,628	43,628	—	—	—
U.S.A. corn.....	213,500	—	213,500	100,500	1,500	102,000
U.S.A. sorghum.....	—	—	—	cars 3	—	s
U.S.A. beans.....	—	533	533	—	—	—
U.S.A. mustard seed.....	22,197	—	22,197	—	—	—
Western Grain Inspected in the Eastern Division—						
Barley.....	...	536,300	536,300	...	377,300	377,300
Flaxseed.....	...	8,030,368	8,030,368	...	2,662,545	2,662,545
Buckwheat.....	...	—	—	...	26,981	26,981
Peas.....	...	31,891	31,891	...	18,018	18,018

¹ In bushels of 50 lb.² In bushels of 45 lb.³ Quantity in bushels not available.

Lake Shipments of Grain.—The 1958 navigation season opened on Apr. 18 and closed on Dec. 13. During that season, total vessel shipments of wheat, oats, barley, rye, flaxseed and buckwheat amounted to 322,200,000 bu., 16 p.c. above the 1957 total of 278,600,000 bu. The 1957 season of navigation opened on Apr. 10 and closed on Dec. 14.

26.—Lake Shipments of Canadian Grain from Fort William-Port Arthur, Season of Navigation 1957 and 1958

Grain	1957			1958			
	To Canadian Ports	To U.S. Ports	Total Shipments	To Canadian Ports	To U.S. Ports	To Overseas Direct	Total Shipments
Wheat..... bu.	150,732,926	6,444,403	157,216,512 ¹	186,315,517	5,138,286	449,644	191,956,805 ²
Oats..... "	31,645,712	17,141,860	48,787,572	37,004,270	4,742,264	86,412	41,832,936
Barley..... "	36,394,980	20,311,467	56,706,447	60,846,011	13,062,575	413,655	74,322,241
Rye..... "	880,880	3,392,744	4,273,624	1,981,588	3,328,599	—	5,310,187
Flaxseed..... "	11,532,513	—	11,532,513	8,578,096	—	104,848	8,682,944
Buckwheat..... "	91,730	—	91,730	49,938	—	—	49,938
Totals..... bu.	231,278,741	47,290,474	278,608,398¹	294,775,420	26,271,714	1,054,559	322,155,051²
Mixed grain..... lb.	1,193,710	—	1,193,710	—	—	—	—
Sample grain..... "	16,328,310	—	16,328,310	9,711,500	—	—	9,711,500
Screenings..... tons	49,176	35,325	84,501	40,596	38,814	—	79,410

¹ Includes 39,183 bu. wrecked.² Includes 53,358 bu. wrecked.

Wheat Flour.—After reaching a peak of 56,033,000 cwt. in 1946-47, Canadian wheat flour production dropped to a postwar low of 39,708,000 cwt. in 1949-50. Production in each of the following three crop years was only slightly below the five-year (1945-46—1949-50) average of 47,012,000 cwt. Yearly declines brought production down to 37,623,000 cwt. in 1956-57. During 1957-58, however, this downward trend was reversed; production of wheat flour amounted to some 40,820,000 cwt. and utilization of milling capacity increased from 69.3 p.c. in 1956-57 to 74.7 p.c. in 1957-58.

Exports of wheat flour during recent years have followed approximately the same pattern as production, dropping from the 1946-47 peak of 33,117,000 cwt. to 14,582,000 cwt. in 1956-57, and increasing to 17,557,000 cwt. in 1957-58. The 1957-58 exports of wheat flour amounted to approximately 43.0 p.c. of production compared with 38.8 p.c. in the preceding year.

27.—Wheat Milled for Flour, and Production and Exports of Wheat Flour, Five-Year Averages 1936-50 and Crop Years Ended July 31, 1951-58

Crop Year (Aug. 1-July 31)	Wheat Milled for Flour	Wheat Flour Production	Wheat Flour Exports	
			Amount	P.C. of Production
	'000 bu.	cwt.	cwt.	
Av. 1935-36 — 1939-40.....	67,845	29,405,451	9,603,941	32.7
Av. 1940-41 — 1944-45.....	99,705	43,908,245	23,699,546	54.0
Av. 1945-46 — 1949-50.....	107,330	47,011,540	25,819,721	54.9
1950-51.....	106,748	46,315,153	24,356,912	52.6
1951-52.....	104,494	44,771,184	22,258,324	49.7
1952-53.....	106,727	46,776,625	24,609,199	52.6
1953-54.....	91,855	40,769,909	20,142,824	49.4
1954-55.....	92,407	40,606,599	17,692,945	43.6
1955-56.....	91,770	40,148,750	17,391,300	43.3
1956-57.....	85,149	37,623,446	14,582,431	38.8
1957-58.....	92,289	40,819,678	17,556,886	43.0

Subsection 2.—Livestock Marketings*

The volume of cattle handled through public stockyards and in packing plants in 1958 at 2,706,984 head showed little change from 1957 in total but quality was generally better with a higher proportion of steers and heifers grading choice and good. Movement of stock cattle and feeders from these markets back to farms was about the same as in 1957 but live exports, with a strong demand for feeders in the United States, rose sharply to 658,095 in 1958 from 375,693 in 1957. The marketings of calves were appreciably higher in 1958 but fewer were graded in the better slaughter classes, largely because of the heavy demand for stockers. The quality of sheep and lambs was about the same as in 1957 but total marketings at 18,000 were down 3 p.c. Hog marketings were 19.6 p.c. above 1957 at 6,466,510. This was the largest volume marketed through these channels since 1952 and the fourth largest on record. The quality of hogs marketed was generally about the same as in 1957 with 28.7 p.c. Grade A and 50.4 p.c. Grade B. Regionally, there was improvement of quality in the Maritime Provinces but a slight fall-off in Ontario and the Prairie Provinces.

* More detailed information is available from DBS annual report *Live Stock and Animal Products Statistics* (Catalogue No. 23-203), and the Department of Agriculture publication *Livestock Market Review*. Statistics of livestock and poultry are given at pp. 476-479 of this edition of the Year Book.

28.—Livestock Marketed at Stockyards and Packing Plants, by Grade, 1954-58

(Exclusive of Newfoundland)

Livestock	1954	1955	1956	1957	1958
	No.	No.	No.	No.	No.
Cattle	1,938,672	1,992,818	2,235,443	2,427,669	2,450,306
Steers—					
Choice.....	181,450	210,352	234,515	284,908	337,022
Good.....	210,580	225,535	250,361	271,361	273,090
Medium.....	208,177	190,289	208,538	204,083	154,613
Common.....	112,674	73,381	89,724	68,384	49,233
Heifers—					
Choice.....	16,261	25,666	28,773	49,900	63,752
Good.....	75,071	78,030	76,949	96,777	113,221
Medium.....	107,370	113,593	124,069	146,861	128,056
Common.....	82,146	74,210	92,552	79,954	64,194
Fed calves.....	172,810	174,017	169,635	166,933	130,090
Cows.....	474,775	526,290	584,402	652,428	645,889
Bulls.....	77,666	73,865	73,846	78,805	82,583
Feeder steers.....	177,857	193,067	240,552	274,585	330,665
Stock and feeder cows and heifers.....	41,935	34,523	61,527	52,690	77,898
Calves	899,887	906,623	963,191	999,797	1,015,355
Vcal—					
Good and choice.....	233,671	275,547	244,774	257,578	213,007
Common and medium.....	534,717	486,092	558,063	559,886	510,561
Grass.....	59,005	76,508	87,726	75,505	61,883
Stocker.....	72,494	68,476	72,628	106,828	229,904
Hog Carcasses	5,078,715	5,916,584	5,959,605	5,400,239	6,458,848
"A".....	1,317,890	1,603,070	1,696,209	1,551,536	1,852,098
"B".....	2,723,127	3,071,901	3,018,166	2,738,881	3,258,296
"C".....	463,415	568,724	577,766	535,899	630,593
"D".....	21,663	28,899	30,897	21,032	28,542
Heavies.....	112,812	115,895	108,720	118,983	150,353
Extra heavies.....	88,425	84,039	85,451	93,242	116,439
Lights.....	71,667	117,854	123,008	75,108	84,233
Sows.....	234,189	274,672	266,091	218,250	283,237
Injured, ridglings and stags.....	45,527	51,530	53,297	47,308	55,057
Lambs and Sheep Graded Alive	539,627	555,694	554,808	515,277	483,186
Lambs—					
Good.....	323,752	340,786	328,261	307,141	305,104
Common.....	103,137	108,440	109,926	107,632	103,755
Bucks.....	51,726	43,138	49,178	37,751	18,523
Feeders.....	16,002	18,160	21,938	23,232	22,409
Sheep—					
Good.....	22,474	23,510	23,014	20,359	18,066
Common.....	22,536	21,660	22,491	19,162	15,329
Lamb and Sheep Carcasses	32,937	40,337	49,688	71,441	76,183
Lambs—					
"A".....	14,998	16,055	17,616	28,119	31,664
"B".....	7,284	10,345	13,050	18,395	17,693
"C".....	5,147	6,724	10,281	13,175	13,957
"D".....	1,885	2,354	2,621	3,204	3,588
"E".....	483	503	705	825	930
Sheep.....	3,140	4,356	5,415	7,723	8,351

29.—Livestock Marketed at Public Stockyards, Packing Plants and Direct for Export, by Province, 1958

(Exclusive of Newfoundland)

Livestock	Maritime Provinces	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Total
	No.	No.	No.	No.	No.	No.	No.	No.
Cattle	40,930	146,913	789,285	255,173	574,111	821,103	76,469	2,706,984
Totals to stockyards.....	4,819	83,017	429,410	170,024	373,657	510,345	16,894	1,588,166
Direct to packers.....	34,550	61,686	313,622	82,177	116,202	229,388	24,515	862,140
Direct for export.....	1,536	2,177	46,233	2,891	64,620	73,070	33,539	224,066
Country points in other provinces.....	25	33	20	81	19,632	11,300	1,521	32,612

¹ Livestock billed through stockyards to country points outside province of origin.

29.—Livestock Marketed at Public Stockyards, Packing Plants and Direct for Export, by Province, 1953—concluded

Livestock	Maritime Provinces	Quebec	Ontario	Manitoba	Saskat- chewan	Alberta	British Columbia	Total
	No.	No.	No.	No.	No.	No.	No.	No.
Calves	30,179	318,947	241,646	101,145	161,017	203,642	8,420	1,064,996
Totals to stockyards....	8,313	110,826	99,365	59,274	126,925	130,940	3,577	539,220
Direct to packers.....	21,086	207,517	129,147	40,280	14,974	59,780	3,351	476,135
Direct for export.....	733	604	13,134	1,398	2,394	2,928	664	21,855
Country points in other provinces ¹	47	—	—	193	16,724	9,994	828	27,786
Hogs	134,307	1,128,994	2,184,856	464,432	704,508	1,817,755	31,658	6,466,510
Totals to stockyards....	4	85,652	385,274	103,123	113,629	179,177	296	867,155
Direct to packers.....	133,900	1,043,337	1,798,304	361,297	590,572	1,633,009	31,274	5,591,693
Direct for export.....	403	5	1,278	12	307	5,569	88	7,662
Sheep and Lambs	41,771	129,636	152,908	34,187	44,838	166,526	24,397	594,263
Totals to stockyards....	3,348	22,244	63,239	11,273	18,340	52,565	2,812	173,821
Direct to packers.....	38,334	107,392	88,397	22,139	14,334	94,753	20,199	385,548
Direct for export.....	89	—	1,272	427	3,135	18,443	968	24,334
Country points in other provinces ¹	—	—	—	348	9,029	765	418	10,560
Total Inward Movement²								
Cattle.....	132	1,654	152,971	11,252	45,323	127,783	1,387	340,502
Calves.....	—	89	61,038	913	8,675	46,441	389	117,595
Sheep and lambs.....	—	—	18,869	1,910	1,342	12,670	1,116	35,907

¹ Livestock billed through stockyards to country points outside province of origin.
from stockyards and plants on through-billings from country points in one province to country points in another province.

² Movement to farms

Section 3.—Warehousing and Cold Storage*

Warehousing ranks high among the means by which the utilities of 'place', 'time' and 'possession' are added to the products of industry. Its importance has been emphasized in modern times because of the introduction of cold storage methods in the conservation of perishable foods.

The presentation of warehousing statistics is difficult because it is not an easy matter to define clearly what are to be regarded as stocks in storage. In these days of complicated business relationships and especially since the rise of the department store and chain store as characteristic institutions in the retail merchandising field, it often happens that warehousing is carried on in close relationship with merchandising. However, if the strict economic definition of warehousing is adopted, then this term should be restricted to those facilities that add the utility of 'time' to the 'form' utilities that are the product of the extraction and manufacturing industries. Because the warehouses established in close connection with retail trade are more often than not convenient places for the temporary storage of goods in process of transfer from the manufacturer or wholesaler to the consumer, they are not, in the strict economic sense, services that add the utility of 'time' to commodities already worked up into 'form'. As some clear line must be drawn and because separate statistics of the latter branch of storage are not available, it is considered practicable to interpret warehousing in this way.

The statistics of warehousing are gathered together under this Section. Subsection 1 presents statistics of the licensed storage of grain. Subsection 2 deals with cold storage facilities without which perishable foods such as meats, dairy products, fish and fruits could not be exchanged or distributed on a wide scale; it includes also figures of stocks of food on hand. Subsection 3 deals with the storage of petroleum and its products, and Subsection 4 with public warehouses and customs warehouses. The facilities that specialize in the storage of tobacco and alcoholic liquors are analysed in Subsection 5. These bonded warehouses, as they are called, are under the strict surveillance of Federal Government excise officers, who supervise all movements into and from such places of storage.

* Information supplied by various Divisions of the Departments of Agriculture, Fisheries, Mines and Technical Surveys, and National Revenue and of the Dominion Bureau of Statistics.

Subsection 1.—Licensed Grain Storage

Total grain storage capacity in Canada, licensed under the provisions of the Canada Grain Act by the Board of Grain Commissioners for Canada, amounted to 632,200,000 bu. at Dec. 1, 1957, an increase of 10,000,000 bu. over the level at Dec. 1, 1956. Some 8,303,000 bu. of this increase occurred in western country elevators. Licensed grain storage capacity in Canada had reached a peak of 603,000,000 bu. at Dec. 1, 1943 but, following the disposal of heavy wartime stocks, declined to 482,400,000 bu. at Dec. 1, 1947. Since that date, capacity has increased each year.

The 1957 grain yields were well below the average of recent years and, with the exception of rye, were sharply reduced from 1956 levels. However, with bumper crops being harvested in five of the six preceding years, the pressure on Canada's grain storage and handling facilities remained great. Farmers' marketings of western grain are governed to a considerable extent by space made available in country elevators as grain moves forward into domestic and export channels. As indicated in Table 30, there was only slight variation in the proportion of elevator space occupied at Nov. 27 and Apr. 2 in the 1957-58 crop year but by July 31 the proportion occupied had increased to 77.0 p.c. Information is given in the table for only three dates in the crop year, but weekly data on stocks of grain in various commercial positions may be obtained from the DBS bulletin *Grain Statistics Weekly* (Catalogue No. 22-004).

30.—Licensed Grain Storage Capacity and Grain in Store, Crop Years
1956-57 and 1957-58

Crop Year and Storage Position	Licensed Storage Capacity	Canadian Grain in Licensed Storage				Proportion of Licensed Storage Capacity Occupied		
	Dec. 1, 1956	Nov. 28, 1956	Apr. 3, 1957	July 31, 1957	Nov. 28, 1956	Apr. 3, 1957	July 31, 1957	
1956-57	'000 bu.	'000 bu.	'000 bu.	'000 bu.	p.c.	p.c.	p.c.	
Western country.....	371,679	284,947	287,117	316,491	76.7	77.2	85.2	
Interior, private and mill.....	20,522	10,110	11,647	9,397	49.3	56.8	45.8	
Interior, terminals.....	18,100	14,511	13,289	12,359	80.2	73.4	68.3	
Churchill.....	5,000	4,801	4,801	4,885	96.0	96.0	97.7	
Pacific coast.....	22,256	13,494	15,937	13,297	60.6	71.6	59.7	
Fort William-Port Arthur.....	90,517	58,007	79,888	69,329	64.1	88.3	76.6	
Georgian Bay and upper Lake ports.....	36,641	29,510	15,229	32,957	80.5	41.6	89.9	
Lower Lake and upper St. Lawrence ports.....	20,520	13,301	10,480	15,325	64.8	51.1	74.7	
Lower St. Lawrence ports.....	29,712	22,112	15,253	23,426	74.4	51.3	78.8	
Maritime ports ¹	7,229	6,582	4,574	6,084	91.0	63.3	84.2	
Totals, 1956-57.....	622,178	457,376	458,213	503,550	73.5	73.6	80.9	
	Dec. 1, 1957	Nov. 27, 1957	Apr. 2, 1958	July 31, 1958	Nov. 27, 1957	Apr. 2, 1958	July 31, 1958	
1957-58	'000 bu.	'000 bu.	'000 bu.	'000 bu.	p.c.	p.c.	p.c.	
Western country.....	379,982	284,261	291,905	306,465	74.8	76.8	80.7	
Interior, private and mill.....	20,583	9,441	10,946	10,806	45.9	53.2	52.5	
Interior, terminals.....	18,100	13,937	13,035	11,339	77.0	72.0	62.6	
Churchill.....	5,000	4,606	4,803	3,742	92.1	96.1	74.8	
Pacific coast.....	23,906	11,349	14,720	13,333	47.5	61.6	55.8	
Fort William-Port Arthur.....	90,517	62,404	82,858	68,767	68.9	91.5	76.0	
Georgian Bay and upper Lake ports.....	36,641	33,344	9,881	28,952	91.0	27.0	79.0	
Lower Lake and upper St. Lawrence ports.....	20,520	16,039	10,161	16,125	78.2	49.5	78.6	
Lower St. Lawrence ports.....	29,712	24,776	17,547	24,783	83.4	59.1	83.4	
Maritime ports ¹	7,229	6,508	1,961	2,699	90.0	27.1	37.3	
Totals, 1957-58.....	632,192	466,666	457,817	487,012	73.8	72.4	77.0	

¹ Excludes Newfoundland.

Subsection 2.—Cold Storage and Storage of Foods

Cold Storage Warehouses.—Under the Cold Storage Act (RSC 1952, c. 52), as amended (RSC 1952, c. 313), subsidies are granted by the Federal Government to encourage the construction and equipment of cold storage warehouses open to the public. The Act is administered by the Department of Agriculture.

There are five classifications of cold storage warehouses in Canada: (1) public warehouses that store foods and food products and where the entire space is open to the public; (2) semi-public, or those that store foods and where part of the space is retained for the products of the owner and the remainder is available to the public; (3) private, or those that store foods and food products and allot no space to the public, a classification that includes refrigerated space in connection with abattoirs, creameries, dairies, cheese factories and wholesale and retail distributing warehouses; (4) locker plant, where the total space is occupied by lockers for rental to the public and where food and food products may be cut, processed, chilled and frozen for storage in lockers; and (5) bait depots, where space is used solely or principally for the freezing and storing of bait for the use of fishermen.

No hard and fast rule can be laid down for distinguishing between public and private warehouses. In general those owned and operated by firms trading in the goods stored in the warehouse are considered as private, although most of these places rent space to the public when it is not required for their own purposes.

The figures in Tables 31 and 32, compiled by the Department of Agriculture, give some idea of the cold storage warehouse capacity in Canada, but it must be explained that it is not possible to secure completely accurate information on this subject and that the figures are approximations only.

31.—Cold Storage Warehouses, by Province, Year Ended Mar. 31, 1959

NOTE.—Figures are approximate only.

Province	Subsidized Public Warehouses				All Warehouses	
	No.	Refrigerated Space	Cost	Total Subsidy	No.	Refrigerated Space
		cu. ft.	\$	\$		cu. ft.
Newfoundland.....	2	44,078	201,959	67,320	68	2,409,521
Prince Edward Island.....	12	358,037	351,408	110,299	24	599,204
Nova Scotia.....	24	5,042,735	4,144,026	1,238,409	191	7,151,477
New Brunswick.....	13	1,875,161	1,805,396	567,473	93	2,973,745
Quebec.....	58	5,791,080	5,619,801	1,803,348	393	25,808,637
Ontario.....	89	14,149,001	11,851,194	3,723,105	964	43,141,890
Manitoba.....	11	3,182,611	2,265,696	683,240	297	11,448,424
Saskatchewan.....	23	1,172,381	1,762,526	562,939	325	5,618,539
Alberta.....	9	1,447,845	2,153,657	701,608	307	8,548,136
British Columbia.....	74	23,663,048	10,029,654	3,029,894	409	35,662,284
Totals.....	315	56,725,977	40,185,318	12,487,635	3,071	143,361,857

32.—Cold Storage Warehouses and Refrigerated Space, by Province, as at Mar. 31, 1959

NOTE.—Figures are subject to revision.

Class of Storage	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	Saskatchewan	Alberta	British Columbia	Canada
Public and Semi-public—											
Warehouses..... No.		13	33	22	145	221	16	13	19	83	568
Refrigerated Space—											
0° to 30°..... cu. ft.	2,400	31,029	407,075	88,556	3,876,579	904,605	6,060	189,141	122,238	675,369	6,303,052
0° to —10°..... "	251,100	239,392	946,698	1,216,080	4,408,235	10,708,632	4,000,770	540,183	1,236,722	4,239,800	27,787,612
Above 30°..... "	9,480	45,298	3,476,709	880,387	8,141,381	13,713,242	1,139,772	498,458	356,847	21,299,253	49,530,827
Locker.....	—	24,618	49,351	66,997	37,074	815,784	39,480	64,278	61,334	144,592	1,303,478
Private—											
Warehouses..... No.	41	10	140	71	237	535	194	113	165	232	1,738
Refrigerated Space—											
0° to 30°..... cu. ft.	232,135	72,926	444,845	63,198	720,506	735,500	386,168	187,093	273,669	869,521	3,986,161
0° to —10°..... "	1,366,683	36,693	618,007	371,890	922,959	4,396,490	726,912	598,857	1,206,155	2,691,750	12,336,306
Above 30°..... "	192,291	142,385	1,151,695	252,417	7,653,149	9,976,694	4,356,861	1,020	4,278,640	5,198,662	35,265,192
Locker.....	1,000	5,898	—	4,340	—	96,679	5,763	—	41,592	37,420	193,712
Bait Depots—											
Warehouses..... No.	24	1	17	—	—	—	—	—	—	—	42
Refrigerated Space—											
0° to 30°..... cu. ft.	321,502	—	47,173	—	—	—	—	—	—	—	368,675
0° to —10°..... "	28,480	965	3,764	—	—	—	—	—	—	—	34,209
Above 30°..... "	730	—	—	—	—	—	—	—	—	—	750
Locker.....	2,700	—	—	—	—	—	—	—	—	—	2,700
Locker Plants—											
Warehouses..... No.	—	—	1	—	11	208	87	199	123	94	723
Refrigerated Space—											
0° to 30°..... cu. ft.	—	—	2,160	—	8,600	42,455	245,913	14,760	8,350	33,998	356,226
0° to —10°..... "	—	—	—	—	2,150	270,085	62,432	64,990	46,990	67,605	500,374
Above 30°..... "	—	—	—	—	3,646	290,078	158,397	384,099	226,273	162,613	1,194,186
Locker.....	—	—	4,000	—	30,158	1,191,046	336,326	1,105,300	689,326	841,641	4,198,397
Totals, Warehouses..... No.	65	24	191	93	393	964	297	325	307	409	3,071
Totals, Refrigerated Space... cu. ft.	2,409,521	599,204	7,151,477	2,973,745	25,808,637	43,141,890	11,448,424	5,618,539	8,548,136	35,662,284	143,361,857

33.—Stocks of Food Commodities in Dairy Factories and Cold Storage Warehouses, as at Jan. 1, 1958 and 1959

Year and Item	As at Jan. 1	Minimum during Year	Date at which Minimum Occurred	Maximum during Year	Date at which Maximum Occurred	Twelve- Month Average
1958						
Butter, creamery, dairy and whey ¹.....'000 lb.	70,109	35,416	May 1	114,117	Nov. 1	73,509
Cheese, cheddar ¹"	52,021	41,303	Apr. 1	61,360	Oct. 1	50,762
Evaporated whole milk....."	47,878	22,138	Apr. 1	80,568	Sept. 1	51,764
Skim milk powder....."	47,838	38,629	Apr. 1	98,324	Nov. 1	60,077
Eggs, shell ¹.....'000 cases	94	56	Nov. 1	259	June 1	167
Eggs, frozen.....'000 lb.	13,317	7,029	Dec. 1	13,317	Jan. 1	10,451
Poultry, dressed and evis- cerated ¹"	35,457	11,735	Aug. 1	62,700	Dec. 1	27,061
Pork, fresh....."	3,677	3,677	Jan. 1	7,066	Dec. 1	5,854
Pork, frozen....."	13,727	8,411	Oct. 1	25,440	May 1	17,440
Pork, cured and in cure....."	7,883	7,883	Jan. 1	11,582	Dec. 1	9,434
Lard....."	6,823	3,990	Oct. 1	8,166	May 1	6,380
Beef, fresh....."	11,023	11,023	Jan. 1	14,497	Feb. 1	13,092
Beef, frozen....."	21,780	10,220	Sept. 1	21,780	Jan. 1	15,073
Beef, cured, etc....."	400	345	May 1	490	Oct. 1	415
Veal....."	5,691	2,879	Apr. 1	7,901	Nov. 1	4,685
Mutton and lamb....."	2,538	1,586	June 1	6,220	Dec. 1	2,865
Apples, fresh.....'000 bu.	5,337	212	June 1	9,377	Nov. 1	2,481
Fruit, frozen.....'000 lb.	24,620	16,931	June 1	41,070	Sept. 1	28,706
Fruit, in preservatives....."	12,716	6,992	July 1	12,716	Jan. 1	9,785
Potatoes.....'000 cwt.	15,857	3,401	June 1	19,061	Nov. 1	7,740
1959						
Butter, creamery, dairy and whey ¹.....'000 lb.	93,843	61,797	Apr. 1	134,153	Oct. 1	96,442
Cheese, cheddar ¹"	46,774	32,263	May 1	56,369	Oct. 1	44,322
Evaporated whole milk....."	47,781	19,671	Apr. 1	66,853	Oct. 1	45,145
Skim milk powder....."	77,313	21,741	Dec. 1	77,313	Jan. 1	60,106
Eggs, shell ¹.....'000 cases	101	53	Dec. 1	398	June 1	225
Eggs, frozen.....'000 lb.	6,207	5,549	Mar. 1	9,911	Sept. 1	7,329
Poultry, dressed and evis- cerated ¹"	46,818	17,964	Aug. 1	47,315	Dec. 1	32,001
Pork, fresh....."	6,901	6,741	Feb. 1	8,766	Apr. 1	7,450
Pork, frozen....."	32,232	32,232	Jan. 1	96,886	May 1	65,686
Pork, cured and in cure....."	8,461	8,461	Jan. 1	11,514	Dec. 1	9,915
Lard....."	8,608	4,285	Nov. 1	10,444	May 1	7,370
Beef, fresh....."	10,849	10,849	Jan. 1	14,415	Nov. 1	12,742
Beef, frozen....."	21,451	14,269	Oct. 1	21,451	Jan. 1	16,655
Beef, cured, etc....."	586	385	Mar. 1	610	Aug. 1	518
Veal....."	4,772	2,700	Mar. 1	5,304	Dec. 1	4,032
Mutton and lamb....."	6,310	2,570	May 1	6,310	Jan. 1	3,751
Apples, fresh.....'000 bu.	6,351	595	June 1	8,281	Nov. 1	2,793
Fruit, frozen.....'000 lb.	37,011	23,559	June 1	37,011	Jan. 1	32,037
Fruit, in preservatives....."	48,046	31,858	June 1	48,046	Jan. 1	41,500
Potatoes.....'000 cwt.	14,227	2,051	June 1	16,773	Nov. 1	6,573

¹ Includes amounts in transit.

Cold Storage Holdings of Fish.—Stocks of frozen fish held in Canada during 1959 followed the usual seasonal trend. Normally, stocks decrease gradually during the early months of the year and reach a low point at the beginning of April or May when fishing has almost ceased; during subsequent months they increase and reach a peak at the beginning of October or November. In 1959, stocks were substantially higher on the average than in 1958.

The production of groundfish fillets and blocks on the Atlantic Coast was considerably above that of the previous year. During the spring, however, demand for these products had begun to weaken, resulting in a price decline at both the primary and secondary stages

of production. Stocks were built up steadily through the season and, at the end of the year, they were more than double those of the same date a year before. The increase was attributable exclusively to cod fillets and blocks. At the beginning of 1959, stocks of Pacific salmon were much higher than at the beginning of 1958. The market was strong during the year and prices were high. Production was appreciably lower than in 1958 and stocks at the end of the year were considerably lower than a year previously. The 1959 production of Pacific halibut was about the same as in 1958 and the demand was good. Stocks at the beginning of the year were slightly higher than in the previous year and they remained higher throughout the year.

34.—Storage Stocks of Fish, by Month and by Type, 1957-59

NOTE.—Stock totals are as at the beginning of each month; stocks of individual products are monthly averages.

Month	1957	1958	1959 ^a	Group and Product	1957	1958	1959 ^a
	'000,000 lb.				'000,000 lb.		
Jan. 1.....	57.1	42.4	47.3	Frozen, Fresh Seafish¹	39.1	32.7	42.0
Feb. 1.....	47.9	33.1	38.5	Salmon, Pacific, dressed and filleted....	6.8	5.7	6.1
Mar. 1.....	41.0	24.2	30.0	Halibut, Pacific, dressed.....	8.2	6.7	8.3
Apr. 1.....	29.6	19.0	26.1	Herring, Atlantic, round.....	0.5	0.9	0.5
May 1.....	29.1	20.6	29.4	Cod, Atlantic, filleted.....	8.0	5.0	9.6
June 1.....	35.5	25.6	35.9				
July 1.....	44.5	41.6	50.4	Frozen, Smoked Seafish¹	2.6	1.7	1.7
Aug. 1.....	54.1	49.1	62.3	Cod, Atlantic, filleted.....	1.3	0.7	0.8
Sept. 1.....	64.4	55.9	71.2	Sea herring, dressed.....	0.6	0.6	0.5
Oct. 1.....	60.6	55.3	70.7	Haddock, dressed.....	0.4	0.2	0.2
Nov. 1.....	61.2	57.0	69.7				
Dec. 1.....	53.1	54.7	63.9	Frozen, Freshwater Fish¹	6.5	5.5	5.9
				Whitefish, dressed and filleted.....	1.7	2.0	2.1
				Tullibee, round or dressed.....	0.3	0.3	0.2
				Pickereel (yellow) dressed and filleted...	0.5	0.3	0.2
Averages....	48.2	39.9	49.6	Averages.....	48.2	39.9	49.6

¹ Includes other items not listed.

Cold Storage of Dairy Products.—Cold storage facilities are a necessary adjunct in the manufacture of dairy products, most of which are perishable in varying degrees. All creameries have facilities for the storing of butter, the size and type of storage depending on the size of the creamery. If the butter produced at small country plants is not printed for immediate sale, the butter solids are disposed of or are transported to larger creameries where better refrigeration is available or to private or public cold storages in the larger urban centres. Temperature control is important in the curing process for cheese as well as in the prevention of deterioration. Most cheese factories are equipped with mechanical refrigeration and are required to have storage capacity for 17 days' produce during the period of maximum manufacture. The cheese is then transferred to central warehouses. As soon as milk is bottled it is placed in storage and held until delivery. Dry whole milk and other dried milk products containing fat are usually stored in cool air chambers to prevent rancidity.

Cold Storage of Apples and Potatoes.—Cold storage space for apples in Canada has increased rapidly in recent years as a result of the promotion of orderly marketing, the extension of the marketing season generally, and increased production in some areas. This trend has followed the curtailment in shipments to traditional markets in the United Kingdom and other European countries after World War II. There has been an increase recently in the construction of both privately and co-operatively owned storages, particularly in the Province of Quebec.

Potatoes are not ordinarily held in cold storage but recently there has been an increase in the construction of potato storage houses and warehouses in the commercial producing areas.

Subsection 3.—Storage of Petroleum and Petroleum Products

Bulk storage plants for petroleum and petroleum products are established at convenient distributing centres, often on a waterfront so that full advantage may be taken of the lower cost of water-borne traffic. From these centres the goods are transferred by boat, rail or truck to smaller distributing depots or directly to retail outlets. The principal refining and distributing centres are located at or near Halifax, Quebec, Montreal, Ottawa, Toronto, Sarnia, Fort William, Regina, Calgary, Turner Valley, Edmonton and Vancouver.

35.—Petroleum and Petroleum Products in Storage as at Jan. 1, 1957-59

(Barrels of 35 Imperial gallons)

Product	1957	1958	1959
	bbl.	bbl.	bbl.
Crude oil.....	23,265,678	22,566,035	24,639,552
Liquefied petroleum gas.....	99,332	77,010	179,931
Petrochemical feed stocks.....	24,280	26,771	18,130
Napththa specialties.....	271,924	300,767	337,070
Aviation gasoline.....	1,101,526	1,631,764	1,453,608
Motor gasoline.....	18,396,415	18,150,366	16,855,788
Aviation turbo-fuel.....	585,056	740,460	958,785
Kerosene, stove oil and tractor fuel.....	5,180,014	5,028,353	4,872,923
Diesel fuel.....	4,040,484	6,166,138	5,040,179
Light fuel oil (Nos. 2 and 3).....	15,280,104	16,337,101	14,670,133
Heavy fuel oil (Nos. 4, 5 and 6).....	5,755,440	6,348,591	5,029,765
Asphalt.....	917,405	1,323,910	979,101
Coke.....	32,632	24,479	38,037
Lubricating oil and grease.....	1,429,452	1,579,159	1,530,027
Wax and candles.....	11,271	19,480	26,009
Other products.....	52,761	169,907	16,696
Still gas.....	298	1,448	700
Unfinished products.....	5,179,505	5,125,988	5,000,504

Subsection 4.—General Warehousing

Public Warehouses.—The summary statistics of the warehousing industry in Canada presented in Table 36 cover the operations of the majority of firms offering warehousing and storage facilities to the public. Associations and organizations such as co-operatives operating warehouses or storages for their own members are not included nor are packing houses and other firms operating storage facilities in connection with their respective businesses. Small food lockers are not included except where they may be part of a general warehousing business.

Many public warehousing companies also operate a local moving and cartage service and others a motor-carrier business, involving long-distance moving. Commencing with 1958, firms earning greater revenue from long-distance moving than from the warehousing business are included in the *Motor Carrier—Freight* report. Prior to 1958 there was some duplication between the warehousing and motor freight carrier series where firms were involved in both industries. The 1958 statistics given in Table 36 include returns from 213 firms which appear to belong primarily to the warehousing industry.

36.—Summary Statistics of the Warehousing Industry, 1955-58

Item		1955	1956	1957	1958
Companies reporting.....	No.	195	227	234	213
Investment in land, warehouses, etc.....	\$	54,275,888	62,720,201	67,205,471	63,958,833
Warehousing Facilities—					
Dry storage (net).....	cu. ft.	67,564,183	79,948,180	82,025,294	75,295,788
Refrigerated storage.....	"	22,801,933	28,324,864	28,397,711	30,960,505
Revenue—					
Storage.....	\$	13,423,170	15,758,690	16,800,663	16,064,998
Cartage and moving.....	\$	15,470,320	18,973,054	20,927,270	13,051,872
Miscellaneous.....	\$	11,158,406	14,137,787	15,487,075	11,359,192
Total Revenue.....	\$	40,051,896	48,869,531	53,215,008	40,476,062
Operating expenses.....	\$	36,013,753	43,799,167	48,462,389	36,624,592
Net Operating Revenue.....	\$	4,038,143	5,070,364	4,752,619	3,851,470
Salaries paid.....	No.	1,672	1,885	1,890	1,516
Wage-Earners—					
Regular.....	No.	5,830	6,294	5,411	3,942
Casual.....	"	880	1,112	1,212	1,104
Salaries and wages paid.....	\$	18,804,462	22,466,569	25,002,080	18,813,722
Motor Vehicles—					
Trucks.....	No.	1,595	1,850	1,922	1,428
Tractors.....	"	432	633	587	329
Semi-trailers.....	"	474	654	573	327
Trailers.....	"	92	77	117	100

Customs Warehouses.—Warehouses for the storage of in-bond goods are known as customs warehouses and are divided into three categories. (1) Those occupied by the Federal Government, some of which are used for examination and appraisal of imported goods and others, known as Queen's warehouses, used for the storage of unclaimed, abandoned, seized or forfeited goods. (2) Bonded warehouses operated and owned by a person other than the Crown and used for the storage and safekeeping of imported goods after entry and conforming to one of the following: (a) an entire building or part of a building completely separated from the remainder of the building by adequate partitions or walls and devoted to the safekeeping of imported goods consigned or sold to the warehouse keeper or other persons; (b) a yard, shed or other suitable enclosure or area devoted to the safekeeping of imported goods too large or too heavy for lodging in a Class 2(a) warehouse; and (c) a farm, yard or other suitable enclosure devoted to the safekeeping of horses, sheep and cattle for feeding and pasturage. (3) Sufferance warehouses for the landing, storage, safekeeping, transfer, examination, delivery and forwarding of imported goods before entry and conforming to one of the following: (a) a warehouse operated or provided by railway, express, airline and shipping companies; (b) warehouses for in-bond goods arriving by commercial motor vehicle; and (c) all sufferance warehouses not described under (a) or (b).

Subsection 5.—Bonded Warehousing and Storage of Wines

Bonded Warehousing.—The Excise Duty Branch of the Department of National Revenue considers any premises licensed under the Excise Act to be a warehouse, whether for storage of raw materials to produce finished tobacco or cigar products or for spirits

or malt used for brewing. Practically the total production of spirits is placed in bonded warehouses and only a small part of the output of beer is retained in storage. Wine, unlike spirits and beer, is not secured under bond. All imports of alcoholic beverages must go through bonded warehouses before being released to Provincial Liquor Commissions or Boards, or other agencies authorized by the Commissions or Boards to take alcoholic beverages out of bond. Similarly, tobacco, cigars and cigarettes that are not stamped and duty paid are secured in bond. In addition to these warehouses, there are those in which no manufacturing or production is carried on but which are used solely for the storage of goods upon which duty has not been paid. Goods are stored in these warehouses usually for the purpose of rapid distribution and for delivery as ships' stores.

Table 37 shows the quantities of distilled liquor, tobacco, cigars and cigarettes in bond in recent years. In addition, the year-end inventories of beer in breweries amount to some 30,000,000 gal.

37.—Distilled Liquor, Tobacco, Cigars and Cigarettes in Bond, Quarterly 1955-59

Item and Quarter		1955	1956	1957	1958	1959
Distilled Liquor—						
March.....	'000 pf. gal.	102,925	110,084	117,567	123,289	126,052
June.....	"	105,047	112,589	120,613	125,661	130,082
September.....	"	105,773	112,875	120,058	125,579	130,907
December.....	"	107,084	110,651	120,371	126,057	132,054
Tobacco, Unmanufactured—						
March.....	'000 lb.	229,016	213,359	199,716	197,282	204,836
June.....	"	202,793	187,570	179,079	187,174	213,529
September.....	"	171,272	157,964	148,881	162,040	179,611
December.....	"	175,983	155,715	120,186	150,965	178,078
Cigars—						
March.....	'000	2,774	2,521	2,986	2,727	1,977
June.....	"	2,121	1,336	1,170	1,150	349
September.....	"	1,359	1,145	1,126	980	237
December.....	"	173	727	1,194	530	119
Cigarettes at 3 lb. or under—¹						
March.....	'000	5,634	3,967	8,656	4,410	5,195
June.....	"	7,612	4,966	3,247	5,341	—
September.....	"	1,842	3,812	11,440	5,531	3,139
December.....	"	3,740	2,690	8,419	6,696	5,738

¹ Excludes Newfoundland.

Beverage spirits, as shown in Table 38, refer to spirits released for consumption but not to industrial alcohol; malt beer does not include beer made from duty-free malt; malt used is the total malt used to produce the malt beer; tobacco includes all types of manufactured tobacco products and snuff.

38.—Beverage Spirits, Malt Beer, Malt, Tobacco and Tobacco Products Taken Out of Bond and Destined for Consumption, 1950-59

Year	Beverage Spirits	Malt Beer ¹	Malt Used	Cigars	Cigarettes	Tobacco
	pf. gal.	gal.	lb.	'000	'000	'000 lb.
1950.....	9,131,903	171,974,662	340,287,033	198,981	17,167,729	29,187
1951.....	10,801,225	179,648,482	353,130,285	169,136	15,667,266	30,177
1952.....	11,171,830	195,780,017	378,764,899	200,263	17,848,325	33,637
1953.....	12,445,166	202,897,996	381,508,232	235,587	21,001,492	28,732
1954.....	11,946,178	"	370,328,106	244,248	22,113,102	26,846
1955.....	11,847,649	"	372,693,929	252,633	24,576,087	26,000
1956.....	13,733,393	"	386,064,673	255,570	26,997,705	23,272
1957.....	14,544,797	"	404,697,177	292,650	30,149,746	22,338
1958.....	15,777,160	"	385,628,053	323,124	32,404,186	23,332
1959.....	..	"	399,626,852	311,277	33,822,125	23,911

¹ Duty has been paid herein on the malt.

² Duty solely on gallonage basis since 1954.

Storage of Wines.—The wine industry is confined to a few localities such as the Niagara Peninsula in Ontario and the Okanagan Valley in British Columbia. Firms manufacturing native wines are not bonded, as far as the Federal Government is concerned, nor is wine in storage for maturing placed in bond. The only goods warehoused in bond in connection with wineries are sugar supplies and supplies of grape spirit distilled by the distilleries and held by the wineries for fortifying wines.

39.—Native Wine Produced and Placed in Storage for Maturing, 1951-58

Year	Ontario		Other Provinces		Total	
	gal.	\$	gal.	\$	gal.	\$
1951.....	4,182,767	2,729,147	494,288	407,849	4,677,055	3,136,996
1952.....	4,383,358	2,764,750	552,694	440,864	4,936,052	3,205,614
1953.....	3,562,498	2,237,316	572,692	430,574	4,135,190	2,667,890
1954.....	4,414,981	2,688,060	640,183	510,464	5,055,164	3,198,524
1955.....	5,059,418	3,059,868	624,670	480,491	5,684,088	3,540,359
1956.....	4,945,429	2,880,176	528,447	415,763	5,473,876	3,295,939
1957.....	4,746,998	3,151,865	656,510	437,243	5,403,508	3,589,108
1958.....	6,593,607	3,810,707	822,398	635,609	7,416,005	4,446,316

Section 4.—Co-operative Organizations

Marketing and purchasing co-operatives continue to play an important role in the marketing of agricultural products and in the purchasing of supplies for farm people in Canada. During 1957-58, such co-operatives reported a membership of 1,332,546, a small decrease from the previous year. There is some duplication included in this number since many members belong to more than one co-operative.

The number of co-operative associations declined slightly in 1957-58 whereas the number of places of business increased substantially. The total business for these associations amounted to \$1,208,455,000, an increase of 8 p.c. over the previous year. Co-operatives accounted for 33 p.c. of the total value of farm products marketed in Canada in 1957-58, an increase of 3 p.c. over 1956-57. Sales of farm products by the marketing and purchasing group were reported at \$859,000,000 in 1958, an increase of \$42,000,000 over 1957. Grains and seeds, valued at \$368,833,000, made up 43 p.c. of the total value of farm products marketed, and sales of livestock at \$248,781,000 and of dairy products at \$185,989,000 accounted for the bulk of the remaining co-operative marketing business. Co-operative sales of fruits and vegetables and of eggs and poultry were also substantial.

Among the provinces, Saskatchewan recorded the greatest value of produce co-operatively marketed, amounting to \$263,698,000; grains made up a large proportion of this amount. Other provinces sharing substantially in the co-operative sales of farm products were: Ontario with \$161,000,000, Alberta \$149,000,000, Quebec \$93,000,000, Manitoba \$78,000,000, and British Columbia \$67,000,000.

Co-operative sales of merchandise and supplies to members amounted to \$296,000,000 in 1958, an increase of \$12,000,000 over the previous year; feed and fertilizer represented 34 p.c. of the total. In this type of business, Quebec co-operatives led the provinces with sales of \$68,000,000, followed closely by Saskatchewan and Ontario.

Members' equity in their marketing and purchasing co-operatives increased by \$3,000,000 in 1958 and an increase of \$23,000,000 was recorded in liabilities to the public.

The local co-operatives are served by ten wholesale associations which are owned and controlled by their respective member co-operatives. These wholesale associations had assets amounting to \$66,000,000 in 1958, varying from \$28,000,000 for the largest to \$105,000 for the smallest. Total sales of supplies and farm products by these wholesalers amounted to \$250,000,000 in 1958, a gain of \$31,000,000 over the previous year.

There are, in addition, numerous co-operative associations operating in various service fields, 800 of which reported their activities in 1958. These reporting associations had a total membership of 250,498, and assets amounting to \$89,570,000. Their services included provision of housing, rural electrification, medical insurance, transportation, recreation facilities, custom grinding, seed cleaning, operation of farm machinery, leasing of grazing land, restaurant operation, and other services.

The data for marketing and purchasing co-operatives do not include fishermen's co-operatives. Though fishermen have formed co-operative organizations in most of the areas having a substantial fishing industry, the volume of their collective business is much smaller than that of agricultural co-operatives. In 1958, fishermen's co-operatives reported sales of fish amounting to \$19,537,000, which constituted about 9 p.c. of all fish marketed in Canada. They sold \$2,652,000 worth of supplies to their members.

40.—Summary Statistics of Co-operative Marketing and Purchasing Associations, Crop Years Ended July 31, 1949-58

Year	Associations	Places of Business	Patrons	Sales of Farm Products	Sales of Supplies	Total Business ¹
	No.	No.	No.	\$	\$	\$
1949.....	2,378	5,667	1,209,520	783,293,225	191,804,630	982,232,002
1950.....	2,495	5,761	1,223,582	803,638,962	206,082,408	1,015,264,763
1951.....	2,348	5,830	1,195,034	769,264,824	209,985,815	988,459,832 ^a
1952.....	2,194	5,470	1,108,803	840,113,835	234,848,220	1,085,854,744
1953.....	2,221	4,987	1,081,493	874,698,323	245,629,603	1,147,590,401
1954.....	2,086	4,510	1,005,266	733,012,042	234,583,125	986,297,820
1955.....	1,949	5,016	1,087,522	704,047,067	228,446,485	941,377,889
1956.....	2,041	5,353	1,115,412	823,389,051	258,751,870	1,092,516,230
1957.....	2,022	5,939	1,363,470	817,601,000	283,730,000	1,116,002,000
1958.....	2,002	6,060	1,332,546	859,327,000	296,492,000	1,208,465,000
	Value of Plant	Total Assets	Liabilities to the Public	Shareholders or Members	Members' Equity	
	\$	\$	\$	No.	\$	
1949.....	89,832,908	236,962,924	106,599,688	1,144,698	130,363,236	
1950.....	98,514,782	254,478,777	111,092,652	1,173,128	143,386,125	
1951.....	99,790,191	306,834,165	159,357,602	1,184,235	147,476,563	
1952.....	129,983,112	410,210,309	214,737,270	1,163,803	195,473,039	
1953.....	117,228,290	419,930,634	234,339,211	1,195,985	185,591,423	
1954.....	120,928,699	418,887,674	235,993,511	1,196,426	182,894,163	
1955.....	126,349,756	419,387,477	229,004,480	1,199,808	190,382,997	
1956.....	137,673,470	463,695,625	259,027,143	1,255,788	204,668,482	
1957.....	144,178,668	481,911,994	262,081,345	1,363,470	219,830,649	
1958.....	156,554,000	506,877,000	284,772,000	1,332,546	222,105,000	

¹ Includes other revenue.

41.—Summary Statistics of Co-operative Marketing and Purchasing Associations, by Province, Crop Years Ended July 31, 1957 and 1958

Province and Year	Associations	Shareholders or Members	Sales of Products	Sales of Merchandise	Total Business ¹
	No.	No.	\$	\$	\$
Newfoundland.....1957	49	7,614	6,498	4,574,418	4,586,232
.....1958	48	7,298	9,000	4,816,000	4,853,000
Prince Edward Island.....1957	19	5,363	1,639,646	3,811,644	5,500,338
.....1958	19	5,277	1,550,000	3,353,000	4,970,000
Nova Scotia.....1957	97	24,335	6,279,601	14,480,645	21,128,011
.....1958	94	28,618	6,934,000	14,656,000	22,008,000

¹ Includes other revenue.

41.—Summary Statistics of Co-operative Marketing and Purchasing Associations, by Province, Crop Years Ended July 31, 1957 and 1958—concluded

Province and Year	Associations	Shareholders or Members	Sales of Products	Sales of Merchandise	Total Business ¹
	No.	No.	\$	\$	\$
New Brunswick.....1957	52	14,226	7,911,039	6,842,566	14,909,415
.....1958	55	13,197	8,708,000	7,376,000	16,256,000
Quebec.....1957	622	84,400	84,304,059	68,393,684	154,247,066
.....1958	615	84,782	93,324,000	67,634,000	162,691,000
Ontario.....1957	300	133,591	137,675,366	57,262,320	196,557,127
.....1958	293	162,693	160,654,000	58,866,000	221,869,000
Manitoba.....1957	116	132,621	74,275,439	16,728,743	92,379,853
.....1958	115	138,117	77,605,000	18,796,000	97,860,000
Saskatchewan.....1957	490	559,330	224,422,096	61,073,621	289,583,433
.....1958	461	514,911	263,698,000	64,676,000	332,822,000
Alberta.....1957	159	215,318	143,851,696	21,371,263	168,059,810
.....1958	175	205,990	148,789,000	26,801,000	178,541,000
British Columbia.....1957	122	55,582	57,857,741	21,164,257	81,358,741
.....1958	121	57,950	66,726,000	22,223,000	90,995,000
Interprovincial.....1957	6	131,090	79,377,641 ^r	8,027,285	87,693,853 ^r
.....1958	6	113,713	67,330,000	7,895,000	75,590,000
Totals.....1957	2,022	1,363,470	817,600,522^r	283,730,446	1,116,001,879^r
.....1958	2,002	1,332,546	895,327,000	296,492,000	1,208,455,000

¹ Includes other revenue.

42.—Products Handled by Marketing and Purchasing Co-operatives, Crop Years Ended July 31, 1957 and 1958

Product	1957		1958	
	Associations ¹	Value of Sales	Associations ¹	Value of Sales
	No.	\$	No.	\$
Marketing.....	997	825,007,743	966	895,327,000
Dairy products.....	472	166,729,939	441	185,989,000
Fruit and vegetables.....	144	29,746,187	142	42,917,000
Grain and seed.....	109	377,017,336	125	368,833,000
Livestock.....	310 ^r	199,848,542	340	248,781,000
Eggs and poultry.....	182	38,710,527	163	33,099,000
Lumber and wood.....	34	1,184,327	62	3,238,000
Honey.....	11	2,304,181	5	2,475,000
Wool.....	40	3,827,046	11	1,767,000
Fur.....	8	484,557	8	581,000
Tobacco.....	3	1,679,180	3	4,519,000
Maple products.....	1	3,043,927	1	2,543,000
Miscellaneous.....	79	431,394	65	555,000
Merchandising.....	1,551	283,730,446	1,596	296,492,000
Food products.....	792	74,967,041	814	81,924,000
Clothing and home furnishings.....	530	9,397,480	560	9,659,000
Hardware.....	2	2	757	18,250,000
Petroleum products and auto accessories.....	591	47,414,402	660	62,275,000
Feed, fertilizer and spray material.....	861	100,272,439	1,084	100,817,000
Machinery and equipment.....	302	10,431,976	259	8,732,000
Coal, wood and building material.....	611	22,430,626	600	17,319,000
Miscellaneous.....	978	18,816,482	582	7,516,000
Totals.....	2,548	1,108,738,189	2,562	1,191,819,000

¹ Duplication exists in this column as some associations market produce as well as handle supplies, some associations market more than one product and some handle many of the supplies listed.

² Included with machinery and equipment.

Section 5.—Interprovincial Freight Movements*

Statistics relating to interprovincial freight movements are difficult to collect since there are no controls over or barriers to such trade. Provincial freight traffic statistics are available for loadings and unloadings of goods carried by rail, water, pipeline and motor transport.

Details of railway freight movement are confined to tons loaded and unloaded by province and contain a certain amount of import and export of goods shipped by water. The figures shown in Table 43, however, do not give a precise measure of total interprovincial freight movement by rail; they indicate only the net interprovincial movement of railway freight, which is but one aspect of that trade. For water-borne traffic, Table 44 shows tonnages of all cargoes unloaded at Canadian ports in both interprovincial and intra-provincial trade, by province of origin. Interprovincial data for oil carried by pipeline is given in Tables 45 to 47; Table 45 shows the quantity of oil entering Canadian pipelines by province and by type of line, and Table 46 shows the quantity of oil delivered by Canadian pipelines by province and by type of line. Oil movement by pipeline between Canada and the United States is also included in Tables 45 and 46; imports for each province are shown in Table 45 and exports for each province in Table 46. Canadian crude oil re-imported by the Interprovincial Pipe Line Company through its pipeline in southern Ontario is shown separately in Table 47.

* Revised in the Transportation and Public Utilities Section, Public Finance and Transportation Division, Dominion Bureau of Statistics.

43.—Railway Revenue Freight Movement, by Province,¹ 1957 and 1958

Province	Loaded		Received from U.S.A. Rail Connections		Totals Carried ²	
	1957	1958	1957	1958	1957	1958
	tons	tons	tons	tons	tons	tons
Newfoundland.....	1,596,093	1,459,854	—	—	1,596,093	1,459,854
Prince Edward Island.....	321,687	360,949	—	—	321,687	360,949
Nova Scotia.....	10,733,635	8,656,152	—	—	10,733,635	8,656,152
New Brunswick.....	4,099,210	3,571,657	490,200	449,509	4,589,410	4,021,166
Quebec.....	37,340,554	31,187,355	4,168,406	3,238,510	41,508,960	34,425,865
Ontario.....	43,746,305	39,844,252	23,596,196	18,347,351	67,342,501	58,191,603
Manitoba.....	7,190,972	7,125,015	672,232	453,740	7,853,204	7,578,755
Saskatchewan.....	13,597,132	14,366,515	273,339	212,919	13,870,471	14,579,434
Alberta.....	12,403,208	11,355,842	181,502	153,763	12,584,710	11,509,605
British Columbia.....	10,884,178	10,167,784	1,058,156	1,100,214	11,942,334	11,267,998
Totals.....	141,902,974	128,095,375	30,440,031	23,956,006	172,343,005	152,051,381
	Unloaded		Delivered to U.S.A. Rail Connections		Totals Terminated ²	
	1957	1958	1957	1958	1957	1958
	tons	tons	tons	tons	tons	tons
Newfoundland.....	2,043,001	2,084,681	—	—	2,043,001	2,084,681
Prince Edward Island.....	415,278	494,068	—	—	415,278	494,068
Nova Scotia.....	10,225,584	8,284,698	—	—	10,225,584	8,284,698
New Brunswick.....	4,592,731	4,071,468	737,264	562,619	5,329,995	4,634,087
Quebec.....	39,159,672	31,801,998	5,786,709	5,061,907	44,946,381	36,863,905
Ontario.....	52,671,529	48,504,141	22,389,903	19,124,697	75,061,432	67,628,838
Manitoba.....	7,506,345	7,160,237	656,691	650,072	8,163,036	7,810,309
Saskatchewan.....	4,568,627	4,195,970	1,162,795	1,256,844	5,731,422	5,452,814
Alberta.....	6,566,392	6,442,091	27,399	37,179	6,593,791	6,479,270
British Columbia.....	12,941,280	11,484,162	1,599,337	1,689,209	14,540,617	13,173,371
Totals.....	140,690,439	124,523,514	32,360,098	28,382,527	173,050,537	152,906,041

¹ Class I and II railways operating in Canada.

² Figures for freight carried and freight terminated do not agree because freight loaded within a certain year is not all unloaded within the same year.

44.—Tonnage of Cargo Loaded and Unloaded at Canadian Ports in Interprovincial Trade,
by Province, 1957 and 1958

Year and Province of Unloading	Province of Loading								Canada
	Newfoundland	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario	Manitoba	British Columbia, N.W.T.	
	tons	tons	tons	tons	tons	tons	tons	tons	tons
1957									
Newfoundland.....	384,245	15,264	936,011	8,099	152,970	30,200	—	1,064	1,507,873
Prince Edward Island.....	99	31	102,781	—	714	500	—	—	104,125
Nova Scotia.....	1,052,194	23,212	260,774	54,863	413,565	—	—	638	1,805,246
New Brunswick.....	823	12,126	371,816	88,213	371,787	1,162	—	—	845,927
Quebec.....	89,170	31,514	1,807,995	67,439	7,593,482	3,768,506	325	14,189	13,372,620
Ontario.....	2,646	—	1,319	—	1,829,525	11,038,791	—	2,979	12,876,260
Manitoba.....	—	—	—	—	530	—	78	33	641
British Columbia and N.W.T.....	6,335	—	5,991	—	23,777	—	697	6,473,647	6,510,447
Totals, 1957.....	1,515,512	82,167	3,486,687	218,614	10,386,350	14,839,159	1,100	6,492,550	37,022,139
1958									
Newfoundland.....	640,504	26,795	857,431	29,530	111,523	23,363	11	—	1,689,157
Prince Edward Island.....	67	—	115,838	—	1,368	1,754	—	—	119,027
Nova Scotia.....	671,371	8,721	261,473	59,459	367,509	600	—	82	1,369,245
New Brunswick.....	965	13,676	368,148	74,791	285,997	1,624	—	57,606	802,807
Quebec.....	156,107	16,660	2,302,501	61,354	6,417,992	4,778,883	2,375	11,946	13,747,818
Ontario.....	5,384	—	—	—	1,923,145	12,234,355	—	156	14,163,040
Manitoba.....	—	—	—	—	535	16	—	21,157	21,708
British Columbia and N.W.T.....	10,373	—	4,857	—	57,129	—	355	6,793,388	6,866,102
Totals, 1958.....	1,494,771	65,832	3,910,248	225,164	9,165,198	17,040,595	2,741	6,894,335	38,778,904

45.—Oil Carried by Pipeline, by Province of Origin or Shipment or Border-Crossing Point, 1957-59

Province of Origin or Entry	1957	1958	1959
	bbl.	bbl.	bbl.
Alberta— ¹			
Gathering.....	129,393,937	106,105,374	124,370,832
Trunk.....	6,207,560	4,715,928	5,172,302
Saskatchewan—			
Gathering.....	28,214,592	38,515,410	41,976,907
Trunk.....	3,836,288	3,037,281	3,508,437
Manitoba—			
Gathering.....	6,038,115	5,776,991	5,014,012
Ontario— ²			
Imports via Sun Pipe Line Co.....	6,105,450	2,404,698	2,065,666
Trunk—refinery products.....	24,444,881	27,292,512	30,082,122
Quebec—			
Imports via Montreal Pipe Line Co.....	81,439,690	78,577,075	84,394,929
Trunk—refinery products ³	19,771,646	15,947,552	15,592,978
Net Received—			
Gathering.....	163,646,644	150,397,775	171,361,751
Trunk.....	54,260,375	50,993,273	54,355,839
Imports from U.S.A.....	87,545,140	80,981,773	86,460,595
Totals.....	305,452,159	282,372,821	312,178,185

¹ Includes natural gasoline and other products.

² Oil re-imported via Interprovincial Pipe Line Company is shown in Table 47.

³ Refinery products destined for Ontario.

46.—Oil Delivered by Pipeline, by Province in which Shipment Terminated or was Transferred to Other Carriers, 1957-59

Province of Termination or Delivery to Other Carriers	1957	1958	1959
	bbl.	bbl.	bbl.
British Columbia—			
Trunk terminated.....	22,300,264	20,597,276	22,585,326
Exports via Trans Mountain Oil Pipe Line Co. ¹	34,234,900	8,968,639	13,271,836
Alberta— ²			
Gathering.....	1,344,281	1,443,603	7,418,683
Trunk.....	12,226,039	14,707,003	15,322,336
Saskatchewan—			
Gathering.....	877,700	513,741	902,517
Trunk.....	16,813,998	15,775,334	17,606,602
Manitoba—			
Trunk terminated.....	9,952,757	10,628,835	10,977,184
Exports to U.S.A. via Interprovincial Pipe Line Co.....	20,643,820	20,781,689	20,433,937
Exports to Ontario via Interprovincial Pipe Line Co. ³	46,845,164	59,552,656	76,177,301
Ontario—			
Trunk, crude.....	6,107,926	2,404,573	2,064,313
Trunk, refinery products.....	44,189,759	43,266,943	45,693,356
Quebec—			
Trunk.....	81,428,930	78,547,073	84,371,790
Net Delivered—			
Gathering.....	2,221,981	1,957,344	8,321,200
Trunk Terminated ⁴	239,861,837	245,469,693	271,798,208
Exports ¹	54,878,720	29,750,328	33,705,773
Totals.....	296,965,538	277,177,365	316,825,181

¹ Includes oil delivered at dock for export.

² Includes natural gasoline and other products.

³ Oil leaving Manitoba for Ontario via U.S.A. Some of this is returned to Canada via ship from Superior, Wis. The amount returned by pipeline is shown in Table 47.

⁴ Includes oil destined for Ontario leaving Manitoba.

**47.—Re-import and Delivery of Oil by Interprovincial Pipe Line Company in Ontario,
1957-59**

Item	1957	1958	1959
	bbl.	bbl.	bbl.
Re-import.....	41,907,248	56,880,146	69,806,042
Delivery.....	41,361,725	56,912,521	69,943,696

PART II.—GOVERNMENT AIDS TO AND CONTROL OF DOMESTIC TRADE

Section 1.—Controls Affecting the Handling and Marketing of Grain

The agencies exercising control of the grain trade in Canada include the Board of Grain Commissioners which since 1912 has administered the provisions of the Canada Grain Act, and the Canadian Wheat Board which operates under the Canadian Wheat Board Act, 1935. The establishment and functions of these two Boards are given in the following specially prepared articles.

THE BOARD OF GRAIN COMMISSIONERS*

The Board of Grain Commissioners was established in 1912 under the authority of the Canada Grain Act, 1912 (RSC 1952, cc. 25 and 308 and amendments). It is a quasi-judicial and administrative body of three—a Chief Commissioner and two Commissioners—reporting to the Minister of Trade and Commerce.

The Canada Grain Act has been called the Magna Charta of the Canadian grain trade or, more particularly, of the Canadian farmer, and the Board's chief duties are to ensure that the rights conferred on the different parties by the provisions of the Act are properly protected. Transportation of grain is restricted except from or to licensed elevators, and restriction is placed on the use of established grade names. The Act does not provide for any control or supervision of grain exchanges and the Board of Grain Commissioners has no power or duties in the matter of grain prices.

The Board manages and operates, under semi-public terminal licences, the Canadian Government elevators situated at Moose Jaw and Saskatoon, Sask., Lethbridge, Edmonton and Calgary, Alta., and Prince Rupert, B.C., and leases the Canadian Government elevator at Port Arthur, Ont., to a privately owned grain company.

The Board provides official inspection, grading and weighing of grain, and registration of warehouse receipts in accordance with the various relative provisions of the Act. Fees are charged for these services in accordance with a schedule contained in a regulation of the Board. In addition to the above, the Board maintains Executive Offices and Statistics and Research Branches. Total personnel is approximately 900. The Executive Offices and other principal offices are situated in Winnipeg, Man., but branch offices are maintained at numerous points from Montreal in the east to Victoria in the west.

All operators of elevators in Western Canada and of elevators in Eastern Canada that handle western-grown grain for export, as well as all parties operating as grain commission merchants, track buyers of grain, or as grain dealers, are required to be licensed by the Board annually and to file security by bond or otherwise as a guarantee for the

* Prepared by W. J. MacLeod, Secretary of the Board of Grain Commissioners for Canada, Winnipeg, Man.

performance of all the obligations imposed upon them either by the provisions of the Canada Grain Act or by the regulations of the Board. The Canada Grain Act lays down the general broad principles that are to govern the handling of grain but usually the details are left to the Board to be dealt with by regulation or order.

To protect the rights of the different parties, the Board has jurisdiction to inquire into and is empowered to give such direction as the right and justice of the case requires regarding any matter relating to the grading or weighing of grain; deductions made from grain for dockage; shortages on delivery of grain into or out of elevators; unfair or discriminatory operation of any elevator; the refusal or neglect of any person to comply with any provision of the Canada Grain Act; and any other matter arising out of the performance of the duties of the Board.

In the Prairie Provinces the Board maintains four Assistant Commissioners—one in Alberta, two in Saskatchewan and one in Manitoba. The Assistant Commissioners investigate complaints of producers and inspect periodically the country elevators in their respective provinces; all elevators with their equipment and stocks of grain are subject at any time to inspection by officials of the Board.

The Board sets up, annually, Committees on Grain Standards and also appoints Grain Appeal Tribunals to give final decisions in cases where appeals are made against the grading of grain by the Board's inspection officials. To assist in maintaining the uniform quality of the top grades of Red Spring Wheat handled through terminal elevators, the Canada Grain Act provides that wheat of these grades shall be stored with grain of like grade only.

In addition to its duties under the Canada Grain Act, certain other duties are performed by the Board. Under the provisions of the inland Water Freight Rates Act (RSC 1952, c. 153), the Board maintains records of rates for the carriage of grain from Fort William or Port Arthur, Ont., by lake or river navigation and is empowered to prescribe maximum rates for such carriage. Under the provisions of the Prairie Farm Assistance Act (RSC 1952, c. 213 as amended), the Board collects from licensees under the Canada Grain Act, 1 p.c. of the purchase price of wheat, oats, barley, rye, flax and rapeseed purchased by such licensees.

THE CANADIAN WHEAT BOARD AND ITS ROLE IN GRAIN MARKETING*

The Canadian Wheat Board was established under the Canadian Wheat Board Act of 1935 (RSC 1952, c. 44 and amendments). This Act defines the object of the Board as the "marketing in an orderly manner, in interprovincial and export trade, of grain grown in Canada". The Board was at first a voluntary Board, that is, farmers had the option of marketing their wheat through the Board or through the private grain trade. In 1943, under the War Measures Act, the Wheat Board was made a compulsory Board, and all wheat going into commercial channels was required to be marketed through it. At the end of the War, the Transitional Powers Act continued the Board as the sole marketing agency for wheat until 1947 when the Canadian Wheat Board Act was amended. The major wartime powers of the Board were continued in the 1947 Act. It is under provisions of this 1947 legislation, with some later amendments, that the Board is operating today.

The powers of the Canadian Wheat Board Act are founded on the jurisdiction of the Parliament of Canada over export and interprovincial trade and commerce, and also upon the declaration in the Canada Grain Act that country elevators are declared to be works for the general advantage of Canada.

Procedures Used.—The Canadian Wheat Board accomplishes its objective of orderly marketing of grain through regulation and agreement, not through the ownership of grain marketing facilities. The Wheat Board itself owns no grain handling facilities. Rather,

* Prepared by C. B. Davidson, Executive Assistant of the Canadian Wheat Board, Winnipeg, Man.

by entering into agreements with the owners of these facilities, it attempts to bring about an orderly flow of grain through each of the steps involved in merchandising the grain from the producer to the domestic and overseas buyer.

The actual selling of wheat is accomplished either by the Wheat Board selling the grain directly to a buyer of another government or, as is much more common, by members of the regular grain trade as agents of the Board. The Wheat Board annually enters into an agreement with shippers and exporters and they buy and sell grain under the terms of this agreement.

To provide for an orderly flow of grain into forward positions during times when the commercial storage facilities are inadequate to handle all the grain produced, it is necessary to regulate the flow of grain from the producer to these forward positions. The first step in achieving this orderly flow is accomplished by the use of producer's delivery permits issued annually by the Canadian Wheat Board. Every delivery of grain made to country elevators by a producer is entered in his permit book. By regulating the amount of grain delivered by the producer to the country elevator by the use of a quota system, and by apportioning shipping orders to country elevators according to the needs created by sales commitments, the Wheat Board regulates the amount of grain coming into the marketing channel.

The next step in the marketing channel is the handling of the grain by the country elevator. The maximum charges for the handling and storing of the grain are set by the Board of Grain Commissioners, but the actual charges are subject to negotiation between the elevator companies and the Wheat Board.

The third step in the marketing process—transporting the grain from the country elevators to the large terminal elevators in Eastern Canada, Churchill or the West Coast—is carried out by the railways. The wheat Board determines the kinds and grades of grain that are required at the different terminal destinations to meet its sales commitments and informs the elevator companies and the railways of these needs. The maximum tariffs for transporting export grain to Vancouver and the Lakehead are set by an agreement between the railways and the Federal Government and approved by federal legislation. This agreement is commonly referred to as the Crow's Nest agreement.

The fourth major step—storing and handling of the grain at terminal elevators—is done in privately or co-operatively owned elevators. Maximum charges are established for this service by the Board of Grain Commissioners.

In the case of oats and barley, the Board's operations are less extensive than those relating to wheat. These two grains are sold in store positions at the terminal elevators at Fort William—Port Arthur and Vancouver. Oats and barley are marketed either on a straight cash basis at prices quoted daily by the Board or on the basis of exchange of futures concluded through the facilities of the Winnipeg Grain Exchange. The Board controls the movement of coarse grains to the Lakehead. The private trade is responsible for the movement of oats and barley from Fort William—Port Arthur or Vancouver positions.

With respect to rye and flax, the Board's operations are very limited. The only way the Board enters the picture for the marketing of these two grains is through the quota system and the movement of such grains to the terminals. The Board attempts to assure an adequate supply of rye and flax in sales position by authorizing shipments as demand warrants.

Price Determination.—The general level of prices received by the Canadian Wheat Board for Canadian wheat is determined by competitive conditions in world markets. While Canadian wheat generally commands a premium over other wheats, the prices established must bear a close relationship to the prices of wheat being offered for export

by other wheat-exporting nations around the world, having regard to quality. The test of Wheat Board pricing is the continuity and volume of Canadian export wheat sales. Any significant changes in the pattern of world trade in wheat indicate the need for reappraisal of pricing policy.

Within a narrow range of prices, the Board can and in fact does vary prices. For example, the Wheat Board may raise or lower the offering price of wheat from a given port, if it is desirable, from the standpoint of meeting the objective of the orderly marketing of wheat to influence the volume of its sales from that port as compared to other Canadian ports. The Wheat Board also varies the prices between grades of wheat to encourage sales of one grade in relationship to sales of another. But the Canadian Wheat Board alone cannot determine the general level of world wheat prices.

Producer's Payments.—The producer receives payment for his wheat, oats and barley in two or three stages. An initial payment price is established early in the crop year by Order in Council. The initial payment price less the cost of handling grain at the local elevator and the transportation costs to the Lakehead or Vancouver is the initial price received by the producer. This price is a guaranteed floor price in that if the Wheat Board, in selling the grain, does not realize this price and the necessary marketing costs, the deficit is borne by the Federal Treasury. However, with very few exceptions, the Wheat Board has operated without financial aid from the Federal Treasury.

After the end of the crop year, but prior to the final payment being made, if the Wheat Board can confidently foresee a surplus accumulating and if authorized by Order in Council, an interim payment is made to producers. This interim payment is the same amount per bushel to all producers of the same grade of grain. When the Board has sold all the grain or otherwise disposed of it in accordance with the Canadian Wheat Board Act, the Board, if authorized by Order in Council, makes a final payment to producers. The payment procedure can then be summarized as follows: (1) the producer receives an initial "floor" price for his grain; (2) the producer receives an interim payment if marketing conditions warrant it; (3) the producer receives a final payment representing his share of any surplus accruing as a result of the sale of the grain; and (4) all producers receive the same price for the same grades of grain, after allowances for transportation costs.

Comparison with Fixed Government Pricing.—The Canadian system of marketing grain differs from systems operative in some countries in the world where the government guarantees a price higher than the export price to the farmer and the national treasury makes up the difference between the export price and the guaranteed price. Western Canadian producers receive the price for their grain that the Wheat Board receives, less its operating costs including carrying charge. The only subsidy received by the farmer in the wheat marketing system is the part payment of storage costs for wheat made by the Government of Canada. Under provisions of the Temporary Wheat Reserves Act, the Minister of Finance, out of the Consolidated Revenue Fund, pays to the Wheat Board the storage costs on wheat in storage at the end of the crop year in excess of 178,000,000 bu.

Changing Functions of the Canadian Wheat Board.—The primary function of the Wheat Board today is still the orderly marketing of western Canadian grain, but because of its unique place in the marketing system it is called on increasingly to perform additional functions. For example, in the administration of the Prairie Grain Advance Payments Act (see p. 445), a key factor is the permit book issued by the Wheat Board. The Government has therefore called on the Wheat Board in the administration of this Act. The Wheat Board is also frequently called on to act as adviser to the Government of Canada in meetings of the International Wheat Council and other meetings dealing with current international developments affecting wheat.

Section 2.—Controls Over Pricing and Marketing of Farm Products Other Than Grain*

With the growing complexity of agricultural marketing caused by the fact that the producer is more and more becoming a specialist and produces more for marketing off the farm than for his own needs, a substantial and continuing change in the approach to marketing problems is evident.

Early developments in the marketing of agricultural products included the establishment of grades and grading which are now almost universally accepted as necessary in the flow of produce to market. The history of marketing legislation in Canada relating to grades and standards of quality might be summarized as follows: (1) for the protection of the consumer in the matter of weights, measures and prices as represented in the early colonial legislation; (2) the encouragement of the export trade by the imposition of weights and simple quality standards in colonial and pre-Confederation legislation; (3) the extension of grading for export and the application of grading to sales by farmers which features the development since Confederation; and (4) the use of grading and retail selling which is a development, in the main, of the present generation.

With respect to organized marketing, early legislation was related mainly to co-operative marketing, although the first wheat board in Canada was established during World War I. British Columbia entered the field of greater regulation of marketing practices in 1927 and during the 1930's most of the provinces passed milk control legislation and regulations of one kind or another. Problems which the producers have been striving to make less difficult as they have developed co-operatives and marketing controls include: (1) short-run or seasonal surpluses which weigh heavily on the market at time of delivery; (2) distribution of the product to alternative market outlets so that returns may be as high as possible; (3) provision of better market knowledge about supplies available for market; and (4) attempt to place themselves, as many individual producers, in a reasonable or better bargaining position with respect to a limited number of buyers to whom the product is sold.

With the exception of tobacco, little or no attempt at production control has been introduced in Canada, although in some countries this also forms part of a broad program of market control. The methods of control might be summarized as follows, although some of the methods mentioned may be combined in some operations: (1) producers may organize co-operative marketing agencies; (2) producers may establish compulsory marketing boards to bargain with groups buying the product for processing or further sale; (3) producers may establish compulsory marketing boards to direct the flow of product and bargain on price; (4) producers may request the Federal Government to establish a government marketing board; and/or (5) producers may request intervention in the pricing system through an offer by the Government to either assist in financing the orderly marketing of the product or in the support of the price of the product in the market-place.

The Government of Canada and provincial governments have, through legislation and in other ways, given marketing aids such as those related to research, education, information, inspection, grading and many other service measures of this type, designed to assist in making adjustments in marketing within agriculture and between agriculture and the remainder of the economy.

There exists in Canada today considerable legislation on the federal, provincial and municipal levels which gives government agencies and farmers the power to take measures for controlling the marketing of farm products. Legislation relating to grain marketing is dealt with in the previous Section and an attempt is made here to cover in a general way some of the other types of legislation, with particular reference to the Agricultural Products Co-operative Marketing Act, the Agricultural Products Marketing Act and the Agricultural Stabilization Act.

* Prepared in the Economics Division of the Administration Branch, Department of Agriculture, Ottawa.

General Marketing Controls.—At the municipal level, many cities and towns have controls with respect to the sale of foods in certain areas or with respect to health standards. For example, most municipalities have some form of health regulation concerning milk being sold within their boundaries. This is often extended to licensing for the purpose of assuring sanitary standards on the farms where the milk originates. Similarly, zoning by-laws not only may control the areas where commercial merchandising generally can take place but may state that public markets where fruits and vegetables and other goods are sold may operate only under fairly strict supervision of the municipality.

With respect to provincial government controls, the first government-appointed agency with power to maintain price structures for fluid milk was set up in Manitoba in the early 1930's, although most of the provinces enacted milk control legislation before 1940. Most provinces finance these milk-control agencies out of public funds, others finance through the collection of licence fees and assessments from those engaged in the fluid milk industry, and some combine the two methods. Most milk-control agencies have authority to carry out some system of licensing which provides for the revocation of such licences if those engaged in the fluid milk business do not conform with the orders of the milk control board.

Price control exercised by these boards takes various forms ranging from the establishment of a minimum price per hundredweight to be paid to producers to complete control of minimum or maximum prices for milk to consumers. In recent years there has been a tendency in some provinces to leave more freedom in pricing to normal competition except for the establishment of a minimum price to producers; in a number of provinces this minimum price is fixed by formula.

The powers given to or requirements made by milk control boards include: (1) authority to inquire into all matters pertaining to the fluid milk industry, to define market areas, to arbitrate disputes, to examine the books and records of those engaged in the industry, to issue and revoke licences, and to establish a price for milk; and (2) authority to require a bond from distributors, periodic reports from distributors, payments to be made to producers by a certain date each month, distributors to give statements to suppliers, distributors to give notice before stopping to accept milk from any producer, producers to give notice before stopping to give milk to any distributor, and the prohibition of distributors requiring capital investment from producers.

Thus fluid milk controls are not only widespread but numerous and are generally considered to be administered in the public interest as well as in the interest of those who have regular opportunities to appear before the boards in connection with requests for price changes.

Federally, the Food and Drug Division of the Department of National Health and Welfare has wide control over the content of foods sold, the Department of Agriculture exercises some control over size and type of packages and containers used in food preparation, and the Weights and Measures Division of the Department of Trade and Commerce also exercises controls in its sphere.

The Agricultural Products Co-operative Marketing Act.—In the late 1930's, the Federal Government decided to assist orderly marketing by encouraging the establishment of pools which would return to the producer the maximum sales return for his product less a maximum margin for handling expenses agreed upon in advance. Thus the Agricultural Products Co-operative Marketing Act and the Wheat Co-operative Marketing Act were passed in 1939. The latter was used in one year only but the Agricultural Products Co-operative Marketing Act, which covers the marketing of all agricultural products except wheat, has been used to a greater or lesser degree from time to time during the intervening years.

The purpose of this Act is to aid farmers in pooling the returns from sale of their products by guaranteeing initial payments and thus assist in the orderly marketing of the product. The Government will undertake to guarantee a certain minimum initial

payment to the producer at the time of delivery of the product including a margin for handling, sales returns to be made to the producer on a co-operative plan. The guaranteed initial payment may be up to a maximum of 80 p.c. of the average price for the previous three years, the exact percentage to be recommended by the Minister of Agriculture who enters into an agreement with the selling agency for the product. The payment to the producer is to be made through the sales agency on a graded basis at the time of delivery of the product.

According to the Act, the co-operative plan means an agreement or an arrangement for the marketing of agricultural products providing for equal returns to primary producers for agricultural products of like grade and quality; for the return to primary producers of the proceeds of the sale of all agricultural products delivered thereunder produced during the year or pooling period, after deduction of processing, carrying and selling costs; and for an initial payment to primary producers. When a fruit grower or rancher delivers products for sale on such a basis, he surrenders title to the product and acquires in exchange a fractional interest in a pool and will receive exactly the same return as other participants for the same grade and quality. Under the Act, agreements may be made by the Minister with co-operative associations, processors of agricultural products or selling agencies authorized to act for one or more co-operative associations, one or more processors or one or more associations and processors. It has been usual to make agreements with a selling agency of the latter type if one marketer does not handle a substantial portion of the product in the area.

Agreements under this Act have been made with respect to the marketing of maple products, honey, onions, potatoes, cheddar cheese, apples, peaches, apricots, cherries, oats, barley, flax, rye, corn, fox and mink pelts, and the following seeds: alfalfa, crested wheat grass, brome grass, slender wheat grass, western rye grass, timothy, red clover, alsike clover, sweet clover, creeping red fescue, meadow fescue, and peas. Thus far the Government of Canada has suffered losses under this Act only with respect to fox pelts and potatoes. This experience indicates that any service to agriculture rendered by this Act has been at relatively small expense to the taxpayers of Canada except for small administrative expenses, most of which have been taken care of as part of the day-to-day administration of the Department of Agriculture.

In administering the Act, the Minister has required that, as far as possible, products should be marketed annually or in a shorter period of time so that pools might be closed out promptly. Where stocks have been carried over for more than one year, definite arrangements are usually made for the marketing of such stocks before a new agreement is completed. The question of carry-over and length of the marketing pool may conceivably present some administrative difficulty during periods of declining price levels. There is some possibility of producer groups attempting to use this Act for the purpose of price support. The Government has made it quite clear that the Act is not intended as a means of supporting prices, but as a basis for assistance in providing credit and financing the orderly marketing of agricultural products on a voluntary pool basis. Another problem arises when arriving at an initial payment basis since the guarantee is usually open to all who wish to deliver and cannot quickly be closed off. Some consideration may have to be given to time and quantity limitations if such difficulties develop.

The Agricultural Products Marketing Act.—The drop in farm prices and income after the end of World War I, the modest recovery in the 1920's, and the start of the depression of the 1930's caused farmers to look to marketing adjustments and reorganization to help resist a further decline in their farm income. British Columbia introduced the first producer-operated market control measures in Canada in 1927 and 1929; authority was given by the Produce Marketing Act and the Dairy Products Sales Adjustment Act, but both Acts were later declared *ultra vires* of provincial authority. The form of organization was originally developed in Queensland, Australia, in connection

with the Queensland Wheat Pool Act of 1920 and the Queensland Primary Products Act of 1922. G. F. Perkin, formerly Chairman of the Ontario Farm Products Marketing Board, stated as follows:—

“The essential feature of the Australian Acts and subsequently their British and Canadian counterparts is that where the majority of the producers of a commodity desire to sell their product collectively the minority may be compelled by law to join in a common sales policy.”

The Natural Products Marketing Act passed by the Federal Government in 1934 was patterned to a considerable extent on the British Marketing Acts of 1931 and 1933 but it too was declared *ultra vires* of federal authority and the judgment of the Privy Council brought down in 1937 indicates that the form in which this legislation was enacted attempted to regulate within the province as well as in matters of interprovincial concern. An extract from the judgment is as follows:—

“It was said that as the Provinces and the Dominion between them possess a totality of complete legislative authority, it must be possible to combine Dominion and provincial legislation so that each within its own sphere could in co-operation with the other achieve the complete power of regulation which is desired. Their Lordships appreciate the importance of the desired aim. Unless and until a change is made in the respective legislative functions of Dominion and Province, it may well be that satisfactory results for both can only be obtained by co-operation. But the legislation will have to be carefully framed, and will not be achieved by either party leaving its own sphere and encroaching upon that of the other. In the present case their Lordships are unable to support the Dominion legislation as it stands. They will, therefore, humbly advise His Majesty that this appeal should be dismissed.”

About this time and following this 1937 judgment, further provincial legislation was enacted and attempted to deal with matters strictly within the provincial authority. Some test cases indicate that these newly developed provincial Acts are mainly *intra vires*. Following the withdrawal of wartime powers of the Federal Government, the Agricultural Products Marketing Act of 1949 was enacted to provide delegation for like powers to those established for marketing boards within a province for the purposes of interprovincial and export trade. A Supreme Court judgment in January 1952 cleared the validity of the Agricultural Products Marketing Act but left some doubt with respect to how licences, levies or other charges can be made by marketing boards beyond the extent of immediate administrative expenses without some approval by the Federal Government in its constitutional field of indirect taxation.

In April 1957, following a further Supreme Court judgment in respect to Ontario legislation, an amendment to the federal Agricultural Products Marketing Act vested in the Governor in Council the right to authorize local boards to “fix, impose and collect levies or charges from persons engaged in the production or marketing of the whole or any part of any agricultural product and for such purpose to classify such persons into groups and fix the levies or charges payable by the members of the different groups in different amounts, to use such levies or charges for the purposes of such board or agency, including the creation of reserves, and the payment of expenses and losses resulting from the sale or disposal of any such agricultural product, and the equalization or adjustment among producers of any agricultural product of moneys realized from the sale thereof during such period or periods of time as the board or agency may determine”.

There are at present close to 75 such marketing boards organized in Canada, about one-half of which are in the Province of Quebec and about one-quarter in Ontario; all other provinces with the exception of Newfoundland have one or more boards.

The annual statistical report prepared by the Economics Division of the Department of Agriculture in relation to these boards indicates that about one-eighth of the farm cash income in Canada in 1958 was received from sales made under the control of provincial marketing board plans, including the following commodities: seed corn, potatoes, other vegetables, sugar beets, tobacco, hogs, certain dairy products, fruits, wool, honey, white beans, maple products and soybeans.

On June 1, 1960, twenty-five of these provincial boards had received an extension of powers for purposes of interprovincial and export trade from the Federal Government. Three had received authority to collect levies in excess of administrative expenses.

The Agricultural Products Marketing Act does not give the local or provincial marketing board any greater control over agencies outside the province than is possible through the control of the commodity by the board and whatever contractual arrangements it may make with such agencies outside the province. It does make it possible, however, for marketing boards to provide groups within a province complete marketing control over any commodity produced in that province, or any area of that province which may be defined.

In administering the Agricultural Products Marketing Act, the Governor in Council has generally extended powers as requested, providing that those presenting the application can show that there is some benefit to them in having these powers in interprovincial and export trade and that the powers to be extended are within the authority of the province to grant in the particular case under consideration.

The Agricultural Stabilization Act.—The Agricultural Stabilization Act was passed in 1958 as the successor to the Agricultural Prices Support Act. Payments related to aids to marketing were common prior to 1940. These included guaranteed advances, bonuses, premiums for quality, assistance in building cold storage and other facilities for warehousing products as well as numerous types of transportation and price assistance, mostly on an *ad hoc* basis.

In 1944, partly if not wholly as a result of the acceptance by farmers of price ceilings during the war years, Parliament provided a formal basis for agricultural price support for all products except wheat; wheat was provided for under special legislation. The Agricultural Prices Support Act and the Agricultural Stabilization Act which succeeded it in 1958 provided for a three-man administrative board which in recent years has had as its members permanent civil servants.

Under the Agricultural Prices Support Act, provision was made on a permissive basis for a General Advisory Committee. This Committee at that time was chaired by the President of the Canadian Federation of Agriculture and included all provincial Deputy Ministers of Agriculture or their representatives, as well as producer representatives from the main agricultural regions and commodity groups. Under the new Agricultural Stabilization Act the Minister is required to name an Advisory Committee of up to ten members who shall be farmers or representatives of farm organizations. In addition, the Board under each Act, as seemed appropriate from time to time, called in special advisory committees either from the trade or from producer groups to assist in the Board's operations in a particular field.

The Agricultural Stabilization Board has at its disposal a revolving fund of \$250,000,000 which is \$50,000,000 higher than that made available to its predecessor. This fund is maintained at that amount by annual appropriations by Parliament to cover any loss that may take place during the year and, if there should be any surplus to the Board's account, it is to be turned over each year to the general Consolidated Revenue Fund.

During the period in which the Agricultural Prices Support Act was operative, the Board used a total working capital of approximately \$600,000,000 in supporting 11 different commodities at various times during the 12-year period 1946-58. Of this amount it recovered through resale of commodities purchased approximately \$500,000,000, leaving a total net cost to the Canadian taxpayer of \$100,000,000 for its operations over the period.

In the first year of operation of the Agricultural Stabilization Board, 21 commodities were under support with a price prescribed in terms of a percentage of a 10-year average market price. In the year ended Mar. 31, 1960, 18 commodities were under support. Most of the commodities were at the 80-p.c. or higher level of the 10-year average. The net cost of support in the fiscal year 1957-58 was approximately \$15,000,000 and in the fiscal year 1958-59, \$60,000,000.

No formula for establishing price support levels was set out nor was the Board required to support any particular agricultural commodity under the Agricultural Prices Support Act. Under the Agricultural Stabilization Act, all price support levels have to be related to a price formula based on the most recent 10-year average of market prices for the product concerned. In addition, the Board, unless the Government sets a higher support level, must support the prices of nine named key commodities at not less than 80 p.c. of the 10-year average market price. The named commodities are butter, cheese, eggs, cattle, hogs, sheep, wheat, oats and barley (for the latter three, the support applies to grains produced outside the prairie areas designated under the Canadian Wheat Board Act). Other commodities can be supported at such percentage of the 10-year average market price as may be approved by the Government from time to time. In other words, other commodities are in the same position as all commodities were under the Agricultural Prices Support Act except that under the new Act the support level has to be prescribed as a percentage of the 10-year average market price.

The Agricultural Stabilization Act also requires that the prices established for the nine named or key commodities have to be announced so that they can apply for 12 months from the effective date. The general intent of the Act is that a similar procedure should apply to all commodities, but legally there is leeway for shorter or longer periods of application for the announcement of support prices of other commodities than for the commodities that the Board is required to support continuously.

The Agricultural Stabilization Board may support the price of products in any one or more of three ways: (1) an offer to purchase by the Board; (2) underwriting the market through producer guarantees, commonly called the "deficiency payment" method; or (3) making such payment for the benefit of producers as may be authorized for the purpose of stabilizing the price of an agricultural commodity. The third method is new under the Agricultural Stabilization Act. All methods have been used during the first years of operation of the Act, although recently there has been some tendency to use the so-called "deficiency payment" method to a greater degree.

The Board has no statutory limits placed on it in the Act in so far as disposal of product is concerned. Unless the Government makes a regulation or the Minister of Agriculture gives a direction, the Board legally may give the required product away, sell it, or otherwise dispose of it.

Regardless of future developments, the course likely to be followed by the Federal Government is to develop broad national policies in an effort to maintain an expanding demand for agricultural products in both domestic and export markets and to encourage the greatest degree of self-help by those in the industry concerned so that production and marketing efficiency may be at a maximum level, with support and control measures occupying a significant but not necessarily major role in assistance to agriculture.

Section 3.—Combinations in Restraint of Trade*

The purpose of Canadian anti-combines legislation is to assist in maintaining free and open competition as a prime stimulus to the achievement of maximum production, distribution and employment in a system of free enterprise. To this end, the legislation seeks to eliminate certain practices in restraint of trade, which serve to prevent the nation's economic resources from being most effectively used for the advantage of all citizens.

The first federal legislation in this field, enacted in 1889, is still effective in amended form as Sect. 411 of the Criminal Code and is the mainstay of Canadian anti-combines legislation. Generally speaking, this Section forbids suppliers (manufacturers, wholesalers, retailers) to arrange among themselves to eliminate competition over a substantial part of any market by limiting production, restricting distribution or fixing prices.

* Revised by T. D. MacDonald, Q.C., Director of Investigation and Research, Combines Investigation Act, Department of Justice, Ottawa. Since the preparation of this information, the Combines Investigation Act and the Criminal Code have again been amended by Act of Parliament, passed on Aug. 1, 1980.

Sect. 411 of the Criminal Code and the Combines Investigation Act (RSC 1952, c. 314) are complementary pieces of legislation. The latter was enacted in 1923 and amended extensively in 1935, 1937, 1946, 1949, 1951 and 1952. It repeats in Sects. 2 and 32 some of the substance of Sect. 411 but, while the latter relates chiefly to arrangements among separate firms, the former embraces any "merger, trust or monopoly" relating to a commodity, which has operated or is likely to operate to the detriment or against the interests of the public.

The Combines Investigation Act, in Sect. 34, also forbids a supplier of goods from prescribing the prices at which they are to be resold by wholesalers and retailers, i.e., the practice of "resale price maintenance". The supplier may, however, suggest resale prices as long as he does nothing to induce or require the trade to adhere to them.

Sect. 412 of the Criminal Code deals with what are commonly called "price discrimination" and "predatory price cutting". It provides that a supplier may not make a practice of discriminating among those of his trade customers who come into competition with one another, by giving one a preferred price which is not available to another if the second is willing to buy in like quantities and qualities as the first; and it also forbids a supplier from selling at prices lower in one locality than in another, or unreasonably low anywhere, if the purpose or effect of his actions is to lessen competition substantially or to eliminate a competitor.

These provisions, Sects. 411 and 412 of the Criminal Code and Sects. 2, 32 and 34 of the Combines Investigation Act, contain the substantive law relating to restrictive trade practices. The other provisions of the Combines Investigation Act relate to investigation and enforcement.

The Act provides for a Director who is responsible for investigating combines and other restrictive practices, and a Commission (the Restrictive Trade Practices Commission) which is responsible for appraising the evidence submitted to it by the Director and the parties under investigation, and for making a report to the Minister. When there are reasonable grounds for believing that a forbidden practice is engaged in, the Director may obtain from the Commission authorization to examine witnesses, search premises, or require written returns. After examining all the information available, if the Director believes that it proves the existence of a forbidden practice, he submits a statement of the evidence to the Commission and to the parties believed to be responsible for the practice. The Commission then sets a time and place at which it hears argument on behalf of the Director in support of his statement; and hears argument and receives evidence on behalf of any persons against whom allegations have been made in the statement. Following this hearing, the Commission prepares and submits a report to the Minister, ordinarily required to be published within thirty days.

The Act also provides for general inquiries into restraints of trade which, while not forbidden or punishable, may affect the public interest. It further provides that the courts, in addition to imposing punishment for a contravention of the legislation, may make an order restraining persons from embarking on, continuing or repeating a contravention. The constitutionality of the Section providing for restraining orders, which was enacted in 1952, has been upheld by the Supreme Court of Canada.

In the years 1954-59, the following reports of inquiries under the legislation have been published:—

- (1) Distribution and Sale of Gasoline at Retail in the Vancouver Area.
- (2) Resale Price Maintenance in the Sale of China and Earthenware.
- (3) Resale Price Maintenance in the Distribution and Sale of Television Sets in the Toronto District.
- (4) Manufacture, Distribution and Sale of Wire Fencing in Canada.
- (5) Distribution and Sale of Coal in the Timmins-Schumacher Area of the Province of Ontario.
- (6) Loss Leader Selling.
- (7) Manufacture, Distribution and Sale of Beer in Canada.
- (8) Manufacture, Distribution and Sale of Asphalt and Tar Roofings and Related Products in Canada.

- (9) Resale Price Maintenance in the Distribution and Sale of Certain Household Appliances.
- (10) Manufacture, Distribution and Sale of Transmission and Conveyor Equipment and Related Products.
- (11) Retail Distribution and Sale of Coal in Winnipeg.
- (12) Manufacture, Distribution and Sale of Quilted Goods, Quilting Materials and Related Products.
- (13) Manufacture, Distribution and Sale of Boxboard Grades of Paperboard.
- (14) Production, Purchase and Sale of Flue-Cured Tobacco in Ontario.
- (15) The Sugar Industry in Western Canada and a Proposed Merger of Sugar Companies.
- (16) Manufacture, Distribution and Sale of Metal Culverts and Related Products.
- (17) Purchase of Pulpwood in Certain Districts in Eastern Canada.
- (18) Manufacture, Distribution and Sale of Yeast.
- (19) Production, Distribution and Sale of Zinc Oxide.
- (20) Wholesale Trade in Cigarettes and Confectionery in the Edmonton District.
- (21) Study of Certain Discriminatory Pricing Practices in the Grocery Trade.
- (22) Manufacture, Distribution and Sale of Ammunition in Canada.
- (23) Distribution and Sale of Electrical Construction Materials and Equipment in Ontario.
- (24) Sale and Distribution of Surgical Rubber Gloves and Certain Other Surgical Supplies.

These reports are obtainable from the Queen's Printer or from the office of the Director of Investigation and Research, Combines Investigation Act, Department of Justice, Ottawa.

Section 4.—Trade Standards*

The Standards Division of the Department of Trade and Commerce consolidates under one Director the administration of the Electricity Inspection Act, the Gas Inspection Act, the Precious Metals Marking Act, the Weights and Measures Act, and the National Trade Mark and True Labelling Act.

Commodity Standards.—On Nov. 26, 1949, Parliament passed the National Trade Mark and True Labelling Act (RSC 1952, c. 191) which provides a framework for the development of the National Standard and true labelling in order to circumvent public deception in advertising. In brief, the use of the National Standard is voluntary and compliance with commodity standards affects only those manufacturers who desire to use the national trade mark. In addition, where manufacturers descriptively label any commodity or container, it must be labelled accurately to avoid public deception. The regulation applying to the labelling of fur garments, for example, has been established as a code of fair practice throughout the merchandising field.

Under the terms of the Precious Metals Marking Act, 1946 (RSC 1952, c. 215) commodities composed of gold, silver, platinum or palladium may be marked with a quality mark describing accurately the quality of the metal. Where such mark is used, a trade mark registered in Canada, or for which application for registration has been made, must also be applied. Gold-plated or silver-plated articles may also be marked under certain conditions outlined in the Act. The inspection staff of the Standards Division is engaged in the examination of advertising matter, in verifying the quality of articles offered for sale, and in checking the marks applied.

Weights and Measures.—The Weights and Measures Act (RSC 1952, c. 292) prescribes the legal standards of weight and measure for use in Canada. The Act requires control of the type of all weighing and measuring devices used for commercial purposes and their periodic verification and surveillance directed towards the elimination of sales by short weight or short measure. The number of inspections made in the calendar year 1958 was 474,583 compared with 469,119 in 1957. The more important inspections comprised the following: weighing machines including scales of all kinds, 227,118; measuring machines for liquids, 97,359; weights, 131,994; other measures, 18,112. Total expenditure was \$1,019,513 in the year ended Mar. 31, 1959 compared with \$966,157 in the previous fiscal year and total revenue \$802,149 compared with \$747,745.

* Prepared by R. W. MacLean, Director, Standards Division, Department of Trade and Commerce, Ottawa.

Electricity and Gas Inspection.—Responsibilities of the Standards Division under the Electricity Inspection Act (RSC 1952, c. 94) and the Gas Inspection Act (RSC 1952, c. 129) comprise the testing and stamping of every electricity and gas meter used throughout Canada for billing purposes, the object being to ensure the correct measurement of all electricity and gas sold. Canada is divided into 21 districts for administration of the two Acts and staff numbers 185. During the year ended Mar. 31, 1959, 1,153,516 electricity and gas meters were tested as compared with 1,191,180 in the preceding year. Revenue derived from the testing amounted to \$903,087 and expenditure to \$949,805.

1.—Electricity and Gas Meter Registrations, 1950-59

Year	Electricity Meters	Gas Meters			
		Manufactured Gas	Natural Gas	Petroleum Gas	Total
	No.	No.	No.	No.	No.
1950.....	3,405,342	610,096	252,468	33	862,602 ¹
1951.....	3,591,056	609,062	264,154	68	873,289 ¹
1952.....	3,779,868	599,140	277,248	1,270	877,663 ¹
1953.....	3,968,020	593,698	298,166	429	892,297 ¹
1954.....	4,175,534	420,432	486,768	532	907,736 ¹
1955.....	4,380,889	416,338	507,875	3,147	927,364 ¹
1956.....	4,571,291	350,558	599,633	4,843	955,034
1957.....	4,748,636	67,726	943,783	4,570	1,016,079
1958.....	4,941,667	35,967	1,069,892	5,101	1,110,960
1959.....	5,157,495	32,799	1,162,678	4,266	1,199,743

¹ Includes five acetylene meters in 1950, 1951 and 1952 and four in 1953, 1954 and 1955.

Section 5.—Government Aid to Small Business

The Small Business Branch of the Department of Trade and Commerce was established in November 1958 to provide liaison between the Government and small business, to study the problems of small business, and to advise the Government on measures that should be taken to meet them. More specifically, the functions of the Branch are as follows: (a) to act as a clearing house in referring inquiries of small business to the appropriate departments of government—federal, provincial and municipal—and to other organizations and institutions; (b) to compile and distribute bulletins and reports on topics of general interest to small business, including information on government procurement; (c) to assist small business, on request, in obtaining statistical, technical, and other information on management, production and marketing problems; (d) to undertake studies concerning small business, particularly for the guidance of the Government in developing new policies in this field, and as background material for dealing more effectively with the problems of small business; (e) to consult and co-operate with educational institutions, representative business associations and other private organizations.

Section 6.—Patents, Copyrights and Trade Marks*

Letters patent are issued subject to the provisions of the Patent Act (RSC 1952, c. 203), effective since 1935. Applications for protection relating to patents should be addressed to the Commissioner of Patents, Ottawa.

* The material relating to patents and copyrights was revised by J. W. T. Michel, Commissioner of Patents, and that relating to trade marks by J. P. McCaffrey, Registrar of Trade Marks, Department of the Secretary of State, Ottawa.

2.—Patents Applied for, Granted, etc., Years Ended Mar. 31, 1955-59

Item		1955	1956	1957	1958	1959
Applications for patents.....	No.	19,448	21,048	21,762	22,257	22,912
Patents granted.....	"	10,282	11,862	15,513	16,261	18,293
Granted to Canadians.....	"	670	662	761	772	1,616
Caveats granted.....	"	337	289	245	242	296
Assignments.....	"	20,062	17,783	19,124	19,744	20,208
Fees received, net.....	\$	1,086,278	1,234,810	1,405,136	1,438,218	1,583,145

The number of Canadian patents granted increased fairly steadily each year from 4,522 at the beginning of the century to a peak of 18,293 in the year ended Mar. 31, 1959. Roughly, 70 p.c. of the patents granted were to residents of the United States, 10 p.c. to residents of the United Kingdom and other Commonwealth countries and 5 p.c. to residents of Canada.

Printed copies of patents issued from Jan. 1, 1948 to date are available at a nominal fee. The Canadian *Patent Office Record* gives a brief digest of each patent.

Canadian and foreign patents may be consulted at the Patent Office Library. The Library has records of British patents and abridged specifications thereof from 1617 to date, and of United States patents from 1872 to date, as well as many patents, indexes, journals and reports from Australia, New Zealand, South Africa, India, Pakistan, France, Belgium, Austria, Norway, Mexico, Italy, Sweden, the Netherlands, Switzerland, Japan, Korea and Brazil.

Copyrights, Industrial Designs and Timber Marks.—Registration of copyright is governed by Copyright Act (RSC 1952, c. 55) in force since 1921. Applications for protection relating to copyrights should be addressed to the Commissioner of Patents, Ottawa.

The Act sets out the qualifications for a copyright and its duration: "Copyrights shall subsist in Canada ... in every original literary, dramatic, musical and artistic work, if the author was, at the date of the making of the work, a British subject, a citizen or subject of a foreign country which has adhered to the Berne Convention and the additional Protocol ... or resident within Her Majesty's Dominions. The term for which the copyright shall subsist shall, except as otherwise expressly provided by this Act, be the life of the author and a period of fifty years after his death."

Copyright protection is extended to records, perforated rolls, cinematographic films, and other contrivances by means of which a work may be mechanically performed. The intention of the Act is to enable Canadian authors to obtain full copyright protection in Canada, in all parts of the Commonwealth, in foreign countries of the Copyright Union and in the United States of America.

Protection of industrial designs and of timber marks is afforded under the Trade Mark and Union Label Act and the Timber Marking Act. Registers of such designs and marks are kept by the Copyright Branch of the Patent Office and information regarding them is published in the *Patent Office Record*.

3.—Copyrights, Industrial Designs and Timber Marks Registered, Years Ended Mar. 31, 1955-59

Item		1955	1956	1957	1958	1959
Copyrights registered.....	No.	5,193	5,151	5,099	5,052	5,331
Industrial designs registered.....	"	286	586	601	665	684
Timber marks registered.....	"	10	6	9	3	7
Assignments registered.....	"	617	731	796	735	640
Fees received, net.....	\$	21,324	21,747	21,028	21,986	23,440

Trade Marks.—The Trade Marks Office, a Branch of the Department of the Secretary of State, administers the Trade Marks Act (SC 1952-53, c. 49) which covers all legislation concerning the registration and use of trade marks and supersedes from July 1, 1954, former legislation enacted under the Unfair Competition Act, the Industrial Design and Union Label Act and the Shop Cards Registration Act. All correspondence relating to an application for registration of a trade mark or for the use of a trade mark should be addressed to the Registrar of Trade Marks, Ottawa.

A *Trade Marks Journal* is published weekly giving particulars of every registration of a trade mark and every registration of a registered user, as well as other advertisements and rulings required under the Act. The required fee payable on application for registration of a trade mark is \$25 and for registration of a person as a registered user of a trade mark, \$20.

4.—Trade Marks Registered, Years Ended Mar. 31, 1955-59

Item	1955	1956	1957	1958	1959
Trade marks registered..... No.	3,377	2,911	3,508	3,769	3,992
Trade mark registrations assigned..... "	2,040	2,652	1,858	3,078	2,642
Trade mark registrations renewed..... "	2,812	2,035	2,002	3,434	1,117
Certified copies prepared..... "	678	689	716	1,069	906
Fees received, net..... \$	222,029	326,619	280,305	273,558	268,437

Section 7.—Subventions and Bounties on Coal*

A major problem of the Canadian coal mining industry arises from the fact that its fields are situated far distant from the main consuming markets of the Provinces of Ontario and Quebec while these markets lie in close proximity to the bituminous and anthracite fields of the United States. Transportation subventions, which have been maintained in varying degree during the past 30 years, were designed to further the movement of Canadian coals to some portions of Central Canada by equalizing as far as possible the laid-down costs of Canadian coals with imported coals. Subventions have been regulated by Orders in Council; it has not been considered practicable to fix the assistance by statute because of frequent changes in the competitive situation.

5.—Expenditure for Coal Subventions, by Province, 1955-59

Province	1955	1956	1957	1958	1959
Nova Scotia..... ton	2,588,400	2,543,302	2,372,678	2,370,131	2,154,034
" \$	8,355,623	6,962,694	7,087,994	8,352,014	11,822,776
New Brunswick..... ton	33,108	21,359	47,769	120,963	137,613
" \$	55,925	42,214	82,770	193,996	253,557
Saskatchewan..... ton	259,518	247,814	320,500	297,892	111,006
" \$	222,454	215,407	282,718	268,479	96,751
Alberta and eastern British Columbia..... ton	730,905	782,228	440,174	216,825	130,956
" \$	2,058,942	2,375,295	1,401,767	666,452	401,820
British Columbia and Alberta export..... ton	219	1,290	40,560	21,533	192,857
" \$	164	1,217	87,004	68,982	845,895
Totals..... ton	3,612,150	3,595,993	3,221,681	3,027,344	2,726,466
" \$	10,693,108	9,596,327	8,942,253	9,549,923	13,420,799

The Canadian Coal Equality Act (RSC 1952, c. 34), which implemented one of the recommendations of the Royal Commission on Maritime Claims (1926), is designed to assist the Nova Scotia steel industry and only incidentally affects coal. It provides for

* Revised by G. W. McCracken, Administrative Officer, Dominion Coal Board, Ottawa.

the payment of 49.5 cents per ton on bituminous coal mined in Canada and converted into coke to be used in the Canadian manufacture of iron and steel. Bounties paid under this authority for the years 1955-59 were as follows:—

Item		1955	1956	1957	1958	1959
Quantity.....	ton	603,134	654,620	765,352	557,445	604,234
Amount.....	\$	298,551	324,037	378,849	275,935	299,096

Section 8.—Control and Sale of Alcoholic Beverages

The retail sale of alcoholic beverages in Canada is controlled by provincial and territorial government liquor control authorities. Alcoholic beverages are sold directly by most of these liquor control authorities to the consumer or to licensees for resale. However, in some provinces beer and wine are sold directly by breweries and wineries to consumers or to licensees for resale. During the year ended Mar. 31, 1958, provincial government liquor control authorities operated 765 retail stores.

Table 6 shows revenue from administration of liquor control by provincial and territorial governments. Details are given in DBS report, *The Control and Sale of Alcoholic Beverages in Canada* (Catalogue No. 63-202).

6.—Provincial Revenue from Administration of Liquor Control, Years Ended Mar. 31, 1957 and 1958

NOTE.—Figures include revenue collected directly by the provincial and territorial governments as well as revenue of the liquor authorities, but exclude revenue resulting from a general retail sales tax on alcoholic beverages imposed by five provinces.

Year and Province or Territory	Net Income from Sales ¹	Sales Tax	Licences and Permits ²	Fines and Confiscations ³	Commission on General Sales Tax Collections	Total
	\$	\$	\$	\$	\$	\$
1957						
Newfoundland.....	2,279,915	...	1,525,322 ³	18,939	3,900	3,828,076
Prince Edward Island...	886,250	273,182	27,396	13,519	...	1,200,347
Nova Scotia.....	10,597,966	...	293,187	53,245	...	10,944,398
New Brunswick.....	7,309,575	...	17,969	24,100	18,783	7,370,427
Quebec.....	28,147,656	1,838,510	12,872,778	198,782	22,850	43,080,576
Ontario.....	43,304,705	...	15,007,779	153,195	...	58,465,679
Manitoba.....	7,469,550	...	2,105,006	84,486	...	9,659,042
Saskatchewan.....	11,014,955	...	56,331	103,826	47,506	11,252,618
Alberta.....	16,597,799	...	1,022,955	260,684	...	17,881,438
British Columbia.....	24,800,366	...	402,305	...	95,154	25,297,825
Yukon Territory.....	730,821	73,113	7,219	6,309	...	817,462
Northwest Territories..	438,827	...	6,303	—	...	445,130
Canada, 1957.....	153,608,385	2,184,805	33,344,550	917,055	188,193	190,243,018
1958						
Newfoundland.....	2,125,970	...	1,664,757 ³	28,280	4,191	3,823,198
Prince Edward Island..	953,977	291,487	30,161	14,306	...	1,289,931
Nova Scotia.....	11,472,790	...	288,874	54,418	...	11,814,082
New Brunswick.....	7,297,721	...	15,048	29,200	19,015	7,360,984
Quebec.....	30,308,238	1,918,781	13,155,186	246,046	50,119	45,678,370
Ontario.....	46,761,972	...	21,581,592	166,616	...	68,510,180
Manitoba.....	8,084,968	...	2,457,896	95,009	...	10,637,873
Saskatchewan.....	11,534,810	...	56,847	122,937	40,374	11,763,968
Alberta.....	17,994,383	...	799,646	254,971	...	19,046,000
British Columbia.....	26,569,948	...	428,210	...	100,470	27,098,628
Yukon Territory.....	736,818	74,943	7,430	8,157	...	827,348
Northwest Territories..	477,554	...	35,233	—	...	512,787
Canada, 1958.....	164,319,149	2,285,211	40,515,880	1,019,940	223,169	208,363,349

¹ After provision for depreciation on fixed assets or for capital expenditure met out of operating income.

² Before deducting any payments to municipalities out of liquor control authority revenue. ³ Includes \$1,444,587 in 1957 and \$1,578,317 in 1958 commission on beer sold direct from local breweries to the public through licensed outlets under controlled prices.

Specified revenue of the Government of Canada from alcoholic beverages comprising excise duties, excise taxes, customs duties and certain fees and licences in that connection are shown in Table 7. Federal Government revenues from the general sales tax on alcoholic beverages are not available.

7.—Specified Revenue of the Federal Government from Alcoholic Beverages, Years Ended Mar. 31, 1954-58

NOTE.—Figures exclude revenue from the general sales tax which is not available by commodities.

Nature of Levy	1954	1955	1956	1957	1958
	\$	\$	\$	\$	\$
On Spirits	97,255,877	99,578,038	104,546,463	114,779,730	120,279,532
Excise duty ¹	49,503,239	56,281,510	61,170,329	70,341,062	83,653,144
Licences.....	7,500	8,000	6,500	7,760	7,250
Import duty ¹	47,745,138	43,288,528	43,369,634	44,430,918	36,619,138
On Malt and Malt Products	83,656,336	73,948,851	80,890,028	83,221,030	88,419,056
Excise duty on—					
Beer.....	4,799,823 ²	72,676,282 ²	80,742,806	83,077,741	88,225,546
Malt.....	78,733,288	1,151,032 ²	—	—	—
Beer licence.....	3,350	3,450	3,500	3,750	3,250
Import duty on beer.....	119,875	118,088	133,722	139,539	190,260
On Wine	3,216,033	3,435,853	3,643,584	3,881,292	4,169,891
Excise taxes.....	2,230,673	2,354,267	2,485,760	2,618,324	2,744,237
Import duty.....	985,360	1,081,586	1,157,824	1,262,968	1,425,654
Totals⁴	184,128,246	176,962,742	189,070,075	201,882,052	212,868,479

¹ Collections on liquor imported for blending purposes are included with import duty until July 1, 1957.
² Other than malt beer. ³ Excise duty on malt abolished Apr. 7, 1954. ⁴ Drawbacks and refunds of duties and taxes have not been deducted.

Value of Sales of Alcoholic Beverages.—The figures in Table 8 do not always represent the final retail selling price of alcoholic beverages to the consumer because, when sold to licensees, only the selling price to the licensee is known.

8.—Value of Sales of Alcoholic Beverages, Years Ended Mar. 31, 1957 and 1958

Province or Territory	Spirits		Wines		Beer		Totals	
	1957	1958	1957	1958	1957	1958	1957	1958
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	4,868	5,048	382	440	9,038	9,288	14,288	14,776
Prince Edward Island.....	1,952	2,077	158	151	894	879	3,004	3,207
Nova Scotia.....	14,644	15,458	2,442	2,359	12,174	13,646	29,260	31,463
New Brunswick.....	10,169	10,296	1,662	1,810	9,072	9,040	20,903	21,146
Quebec.....	74,019	78,664	11,350	12,963	96,492	97,514	181,861	189,141
Ontario.....	127,299	137,405	14,603	16,342	150,941	163,101	292,843	316,848
Manitoba.....	16,189	18,265	1,782	2,147	22,638	23,724	40,609	44,136
Saskatchewan.....	15,057	15,960	1,957	2,107	20,752	21,432	37,766	39,499
Alberta.....	28,295	30,467	2,274	2,631	28,415	29,920	58,984	63,018
British Columbia.....	48,390	50,363	3,806	4,267	36,005	38,460	88,201	93,090
Yukon.....	1,019	998	70	73	906	973	1,995	2,044
Northwest Territories.....	704	734	49	57	362	448	1,115	1,239
Canada	342,605	365,735	40,535	45,347	387,689	408,525	770,829	819,607

PART III.—BANKRUPTCIES AND COMMERCIAL FAILURES

The two Sections of this Part, although closely related as far as subject matter is concerned, cover different aspects of the field of bankruptcies and commercial failures; thus the statistics presented in each Section are not comparable with those given in the other Section.

Section 1 is limited to the supervision, by the Superintendent of Bankruptcy, of the administration of bankrupt estates under the Bankruptcy Act (including the Farmers' Creditors Arrangement Act). This Section, however, gives definite information on the amounts realized from the assets as established by debtors and indicates that values

actually paid to creditors are invariably very much lower than such estimates alone would imply. It can therefore be assumed that this applies in even greater degree to the more extended fields covered in Section 2.

Section 2 is limited to bankruptcies and insolvencies made under federal legislation (the Bankruptcy Act and the Winding-up Act) but does not include failures, sales or seizures carried out apart from such federal legislation. The Dominion Bureau of Statistics coverage was revised from January 1955 to include business failures only (see p. 975). The figures of assets and liabilities are estimates made by the debtor and, because they are not made uniformly, should be accepted with reservations.

Section 1.—Administration of Bankrupt Estates*

Federal insolvency legislation now comprises the Bankruptcy Act 1949 (RSC 1952, c. 14), the Farmers' Creditors Arrangement Act 1943 (RSC 1952, c. 111), the Companies' Creditors Arrangement Act and to some extent the Winding-Up Act. The two Arrangement Acts are designed to avert failure and the statistics in this Section and in Section 2 therefore do not include proposals or arrangements under these Acts. When such proposals or arrangements are rejected by the creditors or fail in their purpose, the proceedings may then come under the Bankruptcy Act, the bankruptcy provisions of the Farmers' Creditors Arrangement Act or, in certain circumstances, the Winding-Up Act. There are no provisions in the Companies' Creditors Arrangement Act for the liquidation or winding-up of insolvent companies.

* Prepared by the Superintendent of Bankruptcy, Ottawa. Early bankruptcy and insolvency legislation is reviewed in the 1952-53 Year Book, pp. 914-915.

1.—Assets, Liabilities, Assets Realized and Cost of Administration under the Bankruptcy Act, by Province, 1958

Province	BANKRUPTCIES UNDER GENERAL PROVISIONS OF THE ACT ¹					
	Estates Closed	Assets as Estimated by Debtors	Liabilities as Estimated by Debtors	Total Realization	Cost of Administration	Paid to Creditors
	No.	\$	\$	\$	\$	\$
Newfoundland.....	8	150,350	182,253	64,985	20,549	44,436
Prince Edward Island.....	3	22,509	50,889	3,936	959	2,977
Nova Scotia.....	11	113,716	243,287	39,217	9,918	29,299
New Brunswick.....	24	579,851	1,032,114	113,964	24,157	89,807
Quebec.....	2,522	21,235,415	42,963,662	5,491,276	2,283,577	3,207,699
Ontario.....	651	12,739,396	23,952,661	2,905,598	900,816	2,004,782
Manitoba.....	20	335,691	601,055	70,395	31,561	38,834
Saskatchewan.....	26	457,497	579,618	106,027	29,216	76,811
Alberta.....	48	605,499	1,032,771	173,145	48,866	124,279
British Columbia.....	48	1,369,380	2,352,347	256,190	108,464	147,726
Totals.....	3,361	37,609,304	72,990,657	9,224,733	3,458,083	5,766,650²
	PROPOSALS UNDER SECTION 27(1) (a) OF THE ACT					
	Proposals Completed	Unsecured Liabilities as Estimated by Debtors	Paid to Unsecured Creditors			
	No.	\$	\$			
Newfoundland.....	...	...	...
Prince Edward Island.....	...	...	...
Nova Scotia.....	2	72,658	20,981			
New Brunswick.....	...	...	...
Quebec.....	103	2,480,205	808,802			
Ontario.....	21	1,573,490	444,826			
Manitoba.....	...	...	...
Saskatchewan.....	1	65,449	21,847			
Alberta.....	...	...	...
British Columbia.....	2	104,224	28,332			
Totals.....	129	4,296,026	1,324,788²			

¹ Includes summary administration provisions of the Bankruptcy Act.

² In addition to the amount paid to creditors by the trustee, secured creditors realized direct from their security approximately \$18,196,166.

Section 2.—Returns under the Bankruptcy and Winding-Up Acts as compiled by the Dominion Bureau of Statistics

The statistics concerning bankruptcies and insolvencies published by the Dominion Bureau of Statistics cover only the failures coming under federal legislation, i.e., the Bankruptcy Act and the Winding-Up Act. Certain documents relating to estates administered under these Acts have, since July 1920, been forwarded to the Dominion Statistician for statistical analysis. The Bankruptcy Act of 1949 altered the administration of bankruptcies by providing for proposals from insolvent persons. Since July 1950, agreements made under this method have not been included with the statistics of bankruptcy, so that subsequent figures are not strictly comparable with those for previous years. In Table 2 the number of proposals for recent years is shown so as to give a general impression of the trend.

A major revision made in the compilation and presentation of commercial failures statistics by the Dominion Bureau of Statistics extends back to January 1955. The revised series covers business failures only, excluding failures of individuals such as wage-earners, salesmen and executive personnel, formerly included. In Tables 2, 3 and 4 figures for the year 1955 are given on both the old and new bases, so as to show the extent to which the series was altered by the revision.

2.—Bankruptcies and Insolvencies under Federal Legislation, by Province, 1949-58

NOTE.—Figures from 1923 are given in the corresponding table of previous Year Books beginning with the 1941 edition.

Year	Atlantic Provinces ¹	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Total
	No.	No.	No.	No.	No.	No.	No.	No.
1949.....	19	827	131	16	5	13	55	1,066
1950.....	48	967	186	16	9	16	61	1,303
1951.....	44	1,022	227	15	13	14	64	1,399
1952.....	40	1,167	220	13	8	13	48	1,509
1953.....	30	1,221	255	27	19	33	72	1,657
1954.....	45	1,645	414	27	30	44	73	2,278
1955.....	37	1,789	436	27	39	44	76	2,448
1955 ²	36	1,180	406	27	37	42	67	1,795
1956.....	37	1,265	507	23	34	41	60	1,967
1957.....	54	1,359	630	26	32	55	57	2,213
1958.....	36	1,376	545	28	18	51	71	2,125
Proposals—								
1950.....	2	66	7	1	—	—	3	79
1951.....	4	160	8	—	—	—	4	176
1952.....	1	172	15	—	—	—	3	191
1953.....	—	158	9	2	—	1	1	171
1954.....	1	416	29	4	1	1	4	456
1955.....	7	466	36	2	1	1	5	518
1956.....	9	738	49	2	—	—	14	812
1957.....	4	479	38	1	1	1	10	534
1958.....	5	395	44	1	1	1	11	458

¹ Newfoundland included from 1950.
ext above.

² New series not strictly comparable with previous figures; see

3.—Bankruptcies and Insolvencies under Federal Legislation, by Branch of Business, 1949-58

NOTE.—Figures from 1924 are given in the corresponding table of previous Year Books beginning with the 1942 edition.

Year	Agriculture	Forestry, Fishing and Trapping	Mining	Manufacturing	Construction	Transportation, Communications and Storage	Trade	Finance and Public Utilities	Service	Not Classified	Total
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
1949.....	8	10	10	232	94	46	374	19	203	70	1,066
1950 ¹	24	7	5	257	97	40	502	20	273	78	1,303
1951.....	20	8	8	269	126	42	570	27	255	74	1,399
1952.....	42	2	7	305	114	45	569	32	279	114	1,509
1953.....	37	6	10	359	124	52	650	30	286	103	1,657
1954.....	48	17	15	416	135	67	973	41	408	158	2,278
1955.....	52	8	8	305	287	116	882	44	454	292	2,448
1955 ²	59	3	4	290	309	68	772	14	250	26	1,795
1956.....	45	10	3	342	375	83	782	28	246	53	1,967
1957 ^r	51	14	15	366	372	109	928	40	244	74	2,213
1958.....	49	9	9	356	367	105	882	43	295	11	2,125

¹ Newfoundland included from 1950.
on p. 975.

² New series not strictly comparable with previous figures; see text on p. 975.

4.—Estimated Liabilities of Bankruptcies and Insolvencies, 1949-58

Year	Atlantic Provinces ¹	Quebec	Ontario	Prairie Provinces	British Columbia	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
1949.....	189	12,842	5,222	1,117	1,985	21,356
1950.....	1,211	16,065	4,700	1,127	1,769	24,872
1951.....	947	15,958	5,919	729	2,359	25,912
1952.....	831	20,249	6,653	621	1,304	29,658
1953.....	1,692	18,022	8,270	2,841	1,993	32,818
1954.....	1,029	30,825	15,036	4,675	1,577	53,142
1955.....	1,855	33,927	16,324	4,196	2,837	59,138
1955 ²	2,248	28,746	16,299	3,939	2,548	53,776
1956.....	2,049	32,704	21,842	5,223	2,437	64,254
1957 ^r	2,508	37,266	31,349	5,683	3,056	79,863
1958.....	4,493	40,250	17,884	4,672	5,479	72,778

¹ Newfoundland included from 1950.
on p. 975.

² New series not strictly comparable with previous figures; see text on p. 975.

**5.—Bankruptcies and Insolvencies by Industries and Economic Areas 1958, with
Totals and Liabilities for 1957 and 1958**

Industry	1958					Totals		Total Liabilities	
	Atlantic Prov- inces	Quebec	Ontario	Prairie Prov- inces	British Colum- bia				
	No.	No.	No.	No.	No.	1958	1957	1958	1957
	No.	No.	No.	No.	No.	No.	No.	\$'000	\$'000
Agriculture.....	1	29	12	5	2	49	51	1,246	1,298
Forestry, Fishing and Trapping	1	6	1	—	1	9	14	323	558
Mining.....	—	6	1	1	1	9	15	440	3,795
Manufacturing.....	3	255	72	11	15	356	366	16,822	14,675
Foods and beverages.....	1	16	5	2	—	24	38	1,044	1,239
Textiles.....	—	3	2	—	—	5	5	368	347
Clothing.....	1	36	8	1	1	47	34	2,255	1,407
Wood products.....	—	52	9	—	6	67	69	5,027	4,449
Paper products and printing in- dustries.....	—	15	5	—	1	21	26	546	622
Iron and steel and transportation equipment.....	1	86	28	5	5	125	114	3,267	4,244
Electrical apparatus and non- ferrous metals.....	—	17	6	—	1	24	22	1,977	682
Chemical products.....	—	—	1	—	—	1	3	36	73
Other industries.....	—	30	8	3	1	42	55	2,301	1,612
Construction.....	8	222	107	19	11	367	372	16,408	19,672
General contractors.....	6	100	54	8	6	174	204	11,475	14,781
Special trade contractors.....	2	122	53	11	5	193	168	4,933	4,891
Transportation, Communica- tions and Storage.....	—	69	26	6	4	105	109	3,407	1,580
Trade.....	22	534	251	46	29	882	928	22,724	25,902
Food.....	2	128	43	5	4	182	164	3,457	3,468
General merchandise.....	4	27	5	6	1	43	43	1,128	1,042
Automotive products.....	3	39	29	3	5	79	47	3,622	2,151
Filling stations.....	1	30	17	6	—	54	53	711	860
Clothing.....	2	74	36	8	8	128	137	2,418	3,259
Shoes.....	—	5	4	—	—	9	18	162	370
Hardware and building materials	2	48	22	4	1	77	64	2,586	2,650
Furniture, appliances and radios.	3	63	38	6	4	114	128	3,829	5,037
Fuel.....	—	8	2	—	—	10	11	431	310
Drugs.....	1	6	1	1	—	9	4	124	197
Jewellery.....	1	19	5	2	2	29	25	767	591
Other.....	3	87	49	5	4	148	234	3,489	5,967
Finance and Public Utilities....	—	25	14	2	1	42	40	2,232	4,959
Service.....	1	220	60	7	7	295	244	8,373	5,510
Community.....	—	12	1	1	—	14	11	311	56
Recreational.....	—	11	4	—	—	15	17	957	493
Business.....	—	16	13	2	2	33	26	484	620
Personal.....	1	181	42	4	5	233	190	6,622	4,342
Not Classified.....	—	10	1	—	—	11	74	802	1,913
Totals.....	36	1,376	545	97	71	2,125	2,213	72,777	79,863

PART IV.—PRICES*

Section 1.—Index Numbers of Wholesale Prices

The term "wholesale prices" refers in this Section to sales transactions that occur below the retail level; it has more of a connotation of bulk purchase than of any homogeneous level of distribution. Ingredients for the general wholesale price index are obtained mainly from manufacturers but include prices from wholesalers proper, assemblers of primary products, agents and the other types of commercial enterprises who trade in commodities of a type or in quantities characteristic of primary marketing functions. Wholesale price indexes are grouped according to a commodity classification scheme based on chief component material similarities. In addition, indexes classified according to degree of manufacture are available. For the latter, however, because significant groups of manufactured products are not directly included, tabulations are not attempted on narrower bases than "Raw and Partly Manufactured" and "Fully and Chiefly Manufactured" commodity groups. Wholesale price indexes are regularly released in the DBS monthly publication *Prices and Price Indexes* (Catalogue No. 62-002) which contains related current series on retail and security prices. Volume 23 of that publication is a historical summary reaching back to the year 1867 for some series and, together with DBS Reference Paper No. 24, *Wholesale Prices Indexes 1913-1950*, contains an explanation of index construction and meaning.

The number and identity of commodities contained in the index has been virtually fixed since 1951 when the index was placed on a 1935-39 base. Commodities were included either because they bulked large in total marketings at that time or because they were considered reliable indicators of price change for commodity groups that did. Price movements displayed by the commodities priced are combined in such a way that they influence composite indexes in the proportions of total marketings including imports and exports during the base period.

General wholesale price indexes have been calculated by most countries for many years but the question "What does a general wholesale price index measure?" cannot be given a precise answer. A retail price index can be identified with consumer expenditure, but a general wholesale index covers a much wider range; yet it is not a measure of the purchasing power of money since it does not include prices of land, labour, securities or services, except in so far as prices of these things enter into commodity prices. As a conventional summary figure, its use has tended toward a reference level against which to observe the behaviour of particular price groups such as farm products, raw materials and building materials. Thus, special wholesale groupings and commodity price relatives are now considered to be of greater importance than the general index itself.

Component indexes and individual price series have numerous uses. One of the most important is in escalator contracts which contain a price adjustment clause. Other major uses include: studies of replacement and construction costs in investment projects; analysis of price movements of both individual items and commodity groups in relation to purchases and sales; industrial planning and market analysis; valuation for tax purposes and inventory analysis; and studies in changes of physical volume. They are also used by business firms abroad in connection with sales and purchases in Canada.

The general wholesale index remained almost unchanged during 1959, standing at 229.7 in December as compared with 229.3 a year earlier. Annual average price levels in 1959 were slightly higher, however, as a result of minor gains recorded between October 1958 and February 1959.

The upward movement in the chemical products group, which began during the latter half of 1958, continued and the index rose 1.9 p.c. from 184.5 to 188.0 in the 12-month period ended December 1959. Soaps and detergents, tanning materials, and prepared paints

* Revised in the Prices Division, Dominion Bureau of Statistics.

were the chief contributors to the increase. Higher prices for fir and cedar between December 1958 and February 1959 caused the wood products group to rise sharply and it held steady for the remainder of the year to stand at 303.4 in December, an increase of 1.6 p.c. over the corresponding month a year earlier. The non-ferrous metals group increased by 1.8 p.c. during the year from 172.7 to 175.8, mainly on the strength of higher prices for copper and its products and for zinc and its products. The vegetable products group fluctuated mildly during the year to arrive at 200.3 in December, an increase of 1.2 p.c. over the December 1958 index of 197.9. Slight advances in the textile products group in the first six months of 1959 were partially offset by lower prices in the second half of the year, restricting the index to an over-all increase of less than 1.0 p.c. between December 1958 and December 1959. Negligible changes occurred in the iron products group during the course of 1959.

From early 1959, sporadic increases occurred in the animal products group until September, when the index dropped sharply from 258.6 to 247.4 at the year's end. Lower prices for hides and skins, leather, livestock, fresh and cured meats, and eggs contributed substantially to the downward movement in this index which was lower by 3.0 p.c. in December 1959 than at the end of 1958. The non-metallic minerals group, reacting to lower prices for coal and petroleum products, declined between March and June, but remained fairly stable throughout the remainder of the year to stand at 185.7 in December, 1.6 p.c. lower than the previous December's index of 188.8.

1.—Annual Index Numbers of Wholesale Price Groups 1950-59, and Monthly Indexes 1958 to Mid-1960

NOTE.—Canadian farm products indexes subsequent to July 1959 are subject to revision; other indexes are final to the end of 1959.

(1935-39=100)

Year and Month	General Whole- sale Index	Raw and Partly Manu- factured Goods	Fully and Chiefly Manu- factured Goods	Indus- trial Materials	Canadian Farm Products ¹		
					Field	Animal	Total
1950.....	211.2	212.8	211.0	244.6	191.9	251.4	236.7
1951.....	240.2	237.9	242.4	296.1	200.4	336.9	268.6
1952.....	226.0	218.7	230.7	252.6	223.0	277.5	250.2
1953.....	220.7	207.0	228.8	232.3	179.4	263.8	221.6
1954.....	217.0	204.8	224.2	223.7	170.9	256.2	213.6
1955.....	218.9	209.7	224.5	236.0	180.1	245.1	212.6
1956.....	225.6	215.8	231.5	248.2	181.6	246.9	214.2
1957.....	227.4	209.4	237.9	240.3	169.2	258.0	213.6
1958.....	227.8	209.3	238.3	229.8	171.4	274.5	222.9
1959 ^p	230.6	210.9	241.6	240.2	170.7	271.6	221.2
1958							
January.....	227.0	207.8	237.9	231.8	171.0	259.6	215.3
February.....	227.8	209.3	238.2	231.7	173.0	268.4	220.7
March.....	228.3	210.6	238.3	230.7	181.7	272.9	227.3
April.....	228.1	209.9	238.6	227.9	178.9	279.9	229.4
May.....	228.3	210.6	238.5	226.7	171.2	288.3	229.8
June.....	227.6	209.4	238.0	227.3	169.1	286.4	227.7
July.....	227.3	208.7	237.8	229.4	172.6	279.3	226.0
August.....	227.0	207.5	238.0	229.1	168.8	275.2	222.0
September.....	227.4	207.8	238.4	228.3	167.4	266.9	217.2
October.....	227.2	207.8	238.1	228.2	166.5	269.3	217.9
November.....	228.8	211.4	238.7	233.1	167.5	269.1	218.3
December.....	229.3	211.3	239.4	233.8	168.8	278.7	223.7

For footnote, see end of table, p. 980.

1.—Annual Index Numbers of Wholesale Price Groups 1950-59, and Monthly Indexes 1957 to Mid-1960—concluded

Year and Month	General Whole- sale Index	Raw and Partly Manu- factured Goods	Fully and Chiefly Manu- factured Goods	Indus- trial Materials	Canadian Farm Products ¹		
					Field	Animal	Total
1957							
January.....	229.9	211.0	240.5	234.0	168.9	278.7	223.8
February.....	230.9	212.2	241.2	236.0	168.0	274.0	221.0
March.....	230.6	211.7	240.9	237.7	167.8	269.5	218.6
April.....	231.2	211.8	241.9	240.4	168.8	271.0	219.9
May.....	231.2	212.3	242.0	241.4	178.9	271.0	224.9
June.....	230.6	211.6	241.4	241.7	185.5	270.6	228.0
July.....	231.1	211.5	242.1	240.3	185.0	272.8	228.9
August.....	231.0	211.1	242.3	242.6	169.1	274.9	222.0
September.....	230.9	210.5	242.5	243.7	161.1	277.0	219.1
October.....	230.0	208.4	242.2	242.0	163.1	267.9	215.5
November.....	230.2	210.2	241.5	240.8	165.2	269.1	217.2
December.....	229.7	208.3	241.4	241.9	166.9	263.1	215.0
1960							
January.....	230.5	208.9	242.2	243.2	171.6	257.7	214.6
February.....	230.0	208.6	241.4	241.8	172.0	252.0	212.0
March.....	229.6	208.0	241.0	240.4	175.1	252.2	213.6
April.....	231.3	210.9	242.2	241.7	180.5	256.2	218.3
May.....	231.3	211.0	242.3	243.2	182.3	257.8	220.0
June.....	231.9	212.8	242.4	242.2	185.2	265.0	225.1
July.....	232.2	212.4	242.9	240.5	173.6	270.1	221.8

¹ Wheat prices used in this index are Canadian Wheat Board buying prices for Nos. 1, 2 and 3 Manitoba Northern at Fort William-Port Arthur. The initial payment is first used and the index revised as further payments are announced. Between August 1945 and July 1950 the price included for No. 1 Manitoba Northern was \$1.83 per bushel. For subsequent crop years the price was as follows: 1950-51, \$1.85; 1951-52, \$1.83; 1952-53, \$1.82; 1953-54, \$1.56; 1954-55, \$1.65; 1955-56, \$1.61; 1956-57, \$1.56; 1957-58, \$1.61; and 1958-59, \$1.594. For the crop year 1959-60 the index is based on an initial price of \$1.40. Western oats and barley were brought under control of the Canadian Wheat Board on Aug. 1, 1949. Since then prices used for the Canadian farm products index have been initial payments to farmers, with participation payments included whenever announced.

Index Numbers of Building Materials Prices.—Price movements of materials entering into building construction are currently measured by two special-purpose series: price index numbers of residential building materials and price index numbers of non-residential building materials, for which the base years are 1935-39 and 1949, respectively. Details of weighting and construction and historical series may be found in the special bulletins prepared at the time the indexes were first published.* More recently the composite indexes have been calculated on an annual basis back to 1913; current indexes are published monthly in *DBS Bulletin Prices and Price Indexes* (Catalogue No. 62-002).

Building material prices in 1959 were slightly higher on average than in 1958 as the annual index for residential building material prices rose from 127.3 to 130.0 and the non-residential series from 129.8 to 131.7. These increases reflected advances for lumber which were partially cancelled after the mid-year, and for the electrical component, and a decline in roofing which was caused by sharply lower prices for asbestos shingles.

* *Price Index Numbers of Residential Building Materials, 1926-48* (Catalogue No. 62-505) and *Price Index Numbers of Non-residential Building Materials, 1935-52* (Catalogue No. 62-506). Revised item and weighting for the electrical component of the residential building materials index, effective July 1959, is available on request.

2.—Annual Price Index Numbers of Residential Building Materials 1950-59, and Monthly Indexes 1958 to Mid-1960

(1935-39=100)

Year and Month	Composite Index (1949=100) ¹	Composite Index	Principal Components								Other Materials
			Cement, Sand and Gravel	Brick, Tile and Stone	Lumber and its Products	Lath, Plaster and Insulation	Roofing Material	Paint and Glass	Plumbing and Heating Equipment	Electrical Equipment and Fixtures	
GROUP WEIGHT AS A PERCENTAGE OF TOTAL.....	...	...	7.6	5.0	42.6	11.3	2.9	3.2	18.6	3.8	5.0
1950.....	106.4	242.7	131.3	163.8	349.2	116.7	235.4	174.8	183.2	184.5	181.1
1951.....	125.5	286.2	140.9	180.7	425.0	126.3	235.8	197.8	210.4	213.3	212.7
1952.....	124.9	284.8	149.5	195.3	415.7	128.5	217.7	194.9	215.6	212.0	226.3
1953.....	123.9	282.6	151.8	205.8	410.6	128.5	218.6	203.8	209.0	211.4	229.5
1954.....	121.7	277.5	151.3	207.4	400.5	128.8	233.4	208.9	202.8	207.7	226.6
1955.....	124.3	283.4	149.4	209.5	409.4	125.3	244.5	219.7	207.2	229.2	230.3
1956.....	128.5	292.9	149.7	218.8	420.2	130.8	259.6	226.9	217.9	243.7	243.7
1957.....	128.4	292.8	153.6	223.8	415.2	136.9	253.3	225.4	227.6	209.2	253.8
1958.....	127.3	290.2	156.8	224.6	409.8	139.8	235.4	226.6	229.8	186.9	254.0
1959.....	130.0	296.3	153.8	227.8	421.1	140.9	239.3	229.3	231.6	201.6	256.9
1958											
January.....	126.8	289.2	154.3	222.9	407.1	140.8	248.2	226.3	228.4	193.2	254.3
February.....	126.8	289.2	154.3	222.9	406.5	140.8	248.2	227.5	229.6	193.2	254.3
March.....	126.8	289.0	157.0	222.9	406.5	140.2	235.4	227.5	229.6	192.4	253.7
April.....	126.7	288.8	157.1	222.9	408.2	139.8	223.1	227.5	229.6	180.8	253.3
May.....	126.6	288.6	157.1	222.9	408.3	139.8	220.2	227.5	228.8	180.8	253.3
June.....	126.5	288.4	157.1	222.9	407.9	139.1	220.2	225.8	229.5	180.0	253.3
July.....	127.0	289.5	157.1	226.3	409.3	139.3	228.8	225.8	229.7	180.0	253.5
August.....	127.9	291.6	157.1	226.3	414.0	139.3	228.9	225.8	229.7	182.1	253.5
September.....	128.4	292.7	157.1	226.3	415.9	139.3	235.3	225.8	230.2	183.6	253.5
October.....	127.8	291.4	157.5	226.3	411.6	139.8	242.6	225.8	230.2	188.3	253.9
November.....	127.9	291.7	157.5	226.3	410.8	139.8	246.7	225.8	231.1	195.6	255.7
December.....	128.0	291.9	157.9	226.3	411.3	139.8	246.7	228.7	231.1	192.9	255.7
1959											
January.....	128.8	293.6	156.3	226.3	415.8	139.8	247.6	228.7	229.8	194.8	255.7
February.....	129.0	294.2	152.3	226.3	417.8	139.8	247.6	228.7	229.8	197.5	254.9
March.....	129.7	295.8	152.2	226.3	421.0	139.8	250.8	228.7	229.8	201.5	254.9
April.....	130.2	296.9	152.0	227.7	421.7	141.9	256.3	228.7	230.7	203.2	256.8
May.....	130.9	298.4	152.0	228.4	425.6	141.4	248.9	228.7	231.1	203.3	256.8
June.....	130.6	297.7	152.0	228.4	424.0	141.4	248.2	228.7	231.1	203.3	256.8
July.....	130.7	298.0	154.7	228.4	424.7	141.2	231.5	228.7	232.8	204.1	256.8
August.....	130.6	297.8	154.7	228.4	424.1	141.2	231.5	228.7	232.8	204.1	257.7
September.....	130.1	296.7	154.7	228.4	421.0	141.2	237.9	230.6	232.8	203.5	257.7
October.....	129.8	295.9	154.7	228.4	419.8	141.2	228.7	230.6	232.8	201.4	257.7
November.....	129.3	294.8	154.7	228.4	417.6	141.2	222.3	230.6	232.8	201.0	258.5
December.....	129.8	295.9	154.7	228.4	420.4	141.2	220.2	230.6	232.8	201.0	258.5
1960 ^a											
January.....	129.9	296.1	154.7	228.4	420.5	141.2	213.8	230.0	234.5	200.4	260.1
February.....	129.6	295.6	154.7	228.4	419.0	141.0	217.6	230.0	234.5	199.5	261.8
March.....	129.6	295.6	154.7	229.8	419.0	140.2	217.6	230.0	234.5	199.5	261.8
April.....	129.7	295.7	154.1	229.8	419.6	140.2	214.4	230.0	234.5	199.8	261.8
May.....	129.6	295.4	153.5	229.8	418.9	140.2	208.5	230.0	236.0	198.2	261.8
June.....	129.6	295.4	153.5	229.8	417.7	143.5	212.3	230.0	236.0	198.5	262.3
July.....	129.4	295.0	154.3	229.7	417.1	143.5	212.3	230.0	235.6	195.6	262.3

¹ Arithmetically converted to base 1949=100 for comparability with price indexes of non-residential building materials shown in Table 3.

3.—Annual Price Index Numbers of Non-residential Building Materials 1950-59, and Monthly Indexes 1958 to Mid-1960

(1949=100)

Year and Month	Composite Index	Principal Components						
		Steel and Metal Work	Plumbing, Heating and Other Equipment	Electrical Equipment and Materials	Aggregate, Cement and Concrete Mix	Lumber and Lumber Products	Blocks, Brick and Stone	Tile
GROUP WEIGHT AS A PERCENTAGE OF TOTAL.....	...	20.1	21.4	11.5	11.1	10.5	9.1	3.8
1950.....	105.0	107.3	103.0	105.8	163.2	110.3	104.3	104.9
1951.....	118.6	122.0	115.7	125.4	111.3	128.3	113.0	110.6
1952.....	123.2	131.3	121.3	121.7	117.4	127.9	119.7	115.5
1953.....	124.4	134.7	119.2	119.6	120.2	127.8	125.9	117.1
1954.....	121.8	128.2	115.2	117.6	120.9	124.5	127.0	120.6
1955.....	123.4	129.9	118.0	121.3	120.3	127.6	127.0	120.3
1956.....	128.0	139.0	123.4	123.6	117.0	131.5	130.3	120.8
1957.....	130.0	147.7	124.1	118.4	119.4	128.7	134.0	118.5
1958.....	129.8	150.9	123.8	114.0	119.6	126.8	135.7	118.2
1959.....	131.7	152.6	126.0	119.2	118.6	131.3	137.4	118.3
1958								
January.....	129.9	150.7	123.1	114.1	120.7	126.4	134.6	117.8
February.....	129.9	150.6	123.2	114.1	121.3	126.0	134.6	117.8
March.....	129.8	150.6	123.3	114.0	121.8	126.0	134.8	118.0
April.....	129.3	150.6	123.5	112.9	119.7	126.6	134.7	118.1
May.....	129.1	150.6	123.2	112.9	118.2	126.4	135.4	118.1
June.....	129.1	150.6	123.4	112.7	118.2	126.2	135.4	118.1
July.....	129.4	150.6	123.7	112.7	118.2	126.7	136.5	118.1
August.....	129.5	150.6	123.8	113.1	118.2	128.1	136.6	118.1
September.....	129.7	150.6	123.7	114.4	118.2	128.4	136.6	118.1
October.....	129.8	150.7	123.9	115.2	118.2	127.5	136.6	118.9
November.....	130.8	152.3	125.7	116.4	119.9	126.8	136.5	118.9
December.....	131.0	152.3	125.6	116.0	122.6	126.6	136.5	118.9
1959								
January.....	131.3	152.3	125.4	116.4	122.3	127.8	136.6	118.6
February.....	131.5	152.4	125.4	118.0	120.3	129.3	137.4	117.8
March.....	131.7	152.4	125.6	118.3	120.3	130.5	137.1	117.9
April.....	132.1	152.6	126.1	120.4	117.6	131.3	137.4	117.9
May.....	132.0	152.6	126.2	120.4	115.9	132.6	137.4	117.9
June.....	131.9	152.6	126.2	120.4	115.9	132.6	137.4	118.0
July.....	131.9	152.6	126.0	121.4	117.3	132.8	137.4	118.7
August.....	132.0	152.6	126.2	121.4	117.3	132.9	137.4	118.7
September.....	131.6	152.6	126.2	118.6	117.3	132.4	137.4	118.7
October.....	131.1	152.6	126.2	117.2	117.3	131.7	137.4	118.7
November.....	131.6	152.8	126.4	119.5	119.4	130.8	137.3	118.5
December.....	132.2	152.9	126.4	119.0	121.7	130.9	138.5	118.5
1960								
January.....	132.2	152.9	126.5	119.0	121.7	131.1	138.5	118.5
February.....	132.0	153.0	126.0	118.1	121.7	130.6	138.5	118.2
March.....	132.2	153.0	126.7	117.8	121.7	130.4	139.7	118.2
April.....	132.5	152.9	126.9	122.7	119.3	130.4	139.7	118.1
May.....	132.4	152.9	127.0	122.2	117.1	129.5	139.7	120.9
June.....	132.5	152.9	127.0	122.2	117.2	129.1	139.7	120.9
July.....	132.8	152.9	127.0	122.2	117.6	129.1	139.7	122.5

World Wholesale Price Indexes.—Price changes within different countries have varied widely during the years. Comparisons of Canadian wholesale price indexes with those of other countries are given in Table 4.

4.—Index Numbers of Wholesale Prices in Canada and Other Countries, 1956-58

(BASE: 1953=100. SOURCE: *United Nations Monthly Bulletin of Statistics*, November 1957 and 1958)

Country	1956	1957	1958	Country	1956	1957	1958
Belgium.....	104	106	102	Iran.....	123	123	119
Brazil.....	176	197	221	Israel.....	131	150	153
Canada.....	102	103	103	Korea, South.....	132	153	143
Chile.....	454	646	810	Netherlands.....	104	107	105
Denmark.....	106	106	105	New Zealand.....	104	105	108
Dominican Republic.....	94	103	103	Norway.....	109	113	111
Egypt.....	110	119	118	Sweden.....	108	110	107
France.....	102	108	121	Switzerland.....	103	105	102
Germany (Western).....	103	105	106	Turkey.....	139	164	189
Greece.....	129	130	127	United Kingdom.....	107 ^a	107 ^a	101
India.....	99	104	107	United States.....	104	107	108

Section 2.—Consumer Price Index

The consumer price index is Canada's official measure of retail price change, the fifth in a series of Canadian index numbers of retail prices dating back to 1913. The current index was introduced by the Dominion Bureau of Statistics in October 1952 in a publication entitled *Consumer Price Index, January 1949–August 1952*, (Catalogue No. 62-502). That publication contains detailed information on such aspects of the index as purpose, family coverage, base period, items included and their relative importance; it also shows the formula used in calculating the index, outlines methods of price collection and explains special features, such as methods of incorporating seasonal variations in food consumption, and changes in the price element of home-ownership costs.

Consumer Price Index Movements.—The 15 years of almost continuous economic growth following the end of the Second World War have experienced several distinct periods of retail price behaviour, the latest of which was in evidence throughout 1959.

The gradual relaxation of price controls in 1946 combined with consumer demands far in excess of supply brought on a period of rapidly advancing prices, so that between 1946 and 1948 the consumer price index advanced more than 25 p.c. A significant exception to these general price increases was the behaviour of rents which, continuing under some degree of control, increased only 7 p.c. in the same period.

Toward the end of 1948, production appeared to be matching consumer demands and, during the slight recession of 1949, consumer prices levelled off. Between the latter months of 1948 and May 1950, retail prices increased only slightly more than 1 p.c. However, with the outbreak of war in Korea in June 1950 came a resurgence of pressure on prices and in the course of the next 18 months further major upward movements took place. The consumer price index rose from 102.7 in July 1950 to 118.1 by December 1951, an increase of 15 p.c. Food advanced sharply from 102.6 to 122.5 or by 20 p.c. The shelter index, based on both home-ownership and rents—the latter freed from most of the war-time controls—moved from 107.4 to 118.2, or by about 10 p.c. Clothing experienced a

more substantial rise of 16 p.c. from 99.1 to 115.2. Household operation, covering such items as furniture, appliances and fuel, rose about the same degree, from 101.6 to 116.4. The wide variety of goods and services covered in the other commodities and services index followed a somewhat similar pattern, moving from 102.4 to 115.0.

The peak in consumer price levels was reached in January 1952 when the index stood at 118.2, dropping off gradually in the first half of 1952 to reach 115.9 in May, mainly as a result of a drop of about 5 p.c. in the food index. From this point a plateau in retail prices was established which lasted for four years. Over this period, the consumer price index displayed noteworthy stability, ranging narrowly from a low of 114.4 to a high of 116.9. Though the general level of prices remained almost unchanged during this lengthy period, significant variations were taking place around a stable average. Foods recorded mostly seasonal movements during 1953, 1954, 1955 and the first half of 1956. Non-food commodities experienced a decline of about 3 p.c. in a steady gradually downward movement, much of it accounted for by appliances which moved down 17 p.c. On the other hand, rents advanced steadily to stand 13 p.c. higher in May 1956 than in May 1952. The entire group of service items also experienced continuous increases throughout this period.

From May 1956 a distinct change occurred in price patterns. A trend toward higher prices continued throughout the remainder of 1956 and the first ten months of 1957 and the total index moved up steadily from 116.6 to a new postwar peak of 123.4 in October 1957. Food, which was the component responsible for most of the upward movement at the total index level, rose from 109.3 in May 1956 to 121.9 by September 1957. Shelter continued to advance steadily, although at a slightly moderating rate, as did other commodities and services, particularly the service elements. In contrast, clothing prices remained practically unchanged and household operation, continuing to reflect the easy price situation of major household appliances, rose only 2.8 p.c.

The most recent period of upward movement in the consumer price index, which began in mid-1956 and continued throughout 1957, persisted in 1958 but with some evidence of moderating. Over the year 1958, consumer prices averaged 2.6 p.c. above the previous year, while 1957 prices were 3.2 p.c. above 1956. In the fourth quarter of 1958 consumer prices averaged 2.4 p.c. higher than in the same period a year earlier, while the fourth quarter of 1957 saw prices 2.6 p.c. above the fourth quarter of 1956.

During 1959, the upward movement in the consumer price index was far less marked than in the preceding years. For the year 1959 as a whole, the average level of consumer prices increased by 1.1 p.c. as compared with increases of 2.6 p.c. and 3.2 p.c. in 1958 and 1957, respectively. The index declined during the first four months of 1959 from 126.2 in December 1958 to 125.4 in April, 1959. The decline was reversed in May and consumer prices reached a high of 128.3 in November and declined slightly in December to stand at 127.9. As in the case of the total index, all major groups, with the exception of the food component, averaged slightly higher in 1959 than in 1958. The increases in 1959, however, were mostly smaller than in the previous years. The largest increase in 1959, as in earlier years, occurred in the index of other goods and services where prices rose 3.1 p.c. This compared with increases of 3.8 p.c. in 1958 and 4.3 p.c. in 1957. Clothing prices were fractionally higher while shelter and household operation indexes rose by 2.2 p.c. and 1.4 p.c., respectively. The most significant change occurred in food prices which were fractionally lower on average in 1959. This was in marked contrast to increases of 3.0 p.c. in 1958 and 4.6 p.c. in 1957. From 1953 to 1956, the downward movement in food prices had offset increases in other components and provided stability in the total index, a condition that reappeared in 1959.

During the first half of 1960, consumer prices remained relatively steady, the January and July indexes being at the same level. Although some changes occurred at the group level, shelter and other commodities and services were the only group indexes to show any degree of upward movement. The food, clothing and household operation indexes were almost unchanged during the half year.

5.—Annual Consumer Price Index Numbers 1950-59, and Monthly Indexes 1958 to Mid-1960

(1949=100)

Year and Month	Food	Household Operation	Shelter	Clothing	Other Com- modities and Services	Composite Index
GROUP WEIGHT AS A PERCENTAGE OF TOTAL.....	31.7	17.3	14.8	11.5	24.7	100.0
1950.....	102.6	102.4	106.2	99.7	103.1	102.9
1951.....	117.0	113.1	114.4	109.8	111.5	113.7
1952.....	116.8	116.2	120.2	111.8	116.0	116.5
1953.....	112.6	117.0	123.6	110.1	115.8	115.5
1954.....	112.2	117.4	126.5	109.4	117.4	116.2
1955.....	112.1	116.4	129.4	108.0	118.1	116.4
1956.....	113.4	117.1	132.5	108.6	120.9	118.1
1957.....	113.6	119.6	134.9	108.5	126.1	121.9
1958.....	122.1	121.0	138.4	109.7	130.9	125.1
1959.....	121.1	122.7	141.4	109.9	134.9	126.5
1958						
January.....	119.4	120.8	136.6	108.8	129.1	123.4
February.....	119.9	120.8	136.9	108.8	129.5	123.7
March.....	121.3	121.1	137.1	109.5	129.6	124.3
April.....	123.4	121.3	137.6	109.8	130.1	125.2
May.....	122.7	120.7	137.9	110.0	130.6	125.1
June.....	122.7	120.6	138.3	109.7	130.7	125.1
July.....	121.4	120.6	138.4	109.9	130.4	124.7
August.....	122.6	120.5	139.1	109.6	130.6	125.2
September.....	122.9	120.8	139.4	109.5	131.5	125.6
October.....	123.4	121.3	139.6	109.9	131.8	126.0
November.....	123.2	121.5	139.8	110.4	133.1	126.3
December.....	122.2	122.0	139.9	110.5	133.4	126.2
1959						
January.....	122.3	121.8	140.2	109.2	133.4	126.1
February.....	121.2	122.0	140.2	108.8	133.4	125.7
March.....	120.0	122.3	140.3	109.4	133.4	125.5
April.....	119.3	122.6	140.5	109.6	133.7	125.4
May.....	118.5	122.5	141.0	109.7	134.9	125.6
June.....	119.1	122.5	141.5	109.2	135.4	125.9
July.....	119.2	122.7	141.7	109.7	134.9	125.9
August.....	120.5	122.6	141.9	109.7	135.3	126.4
September.....	122.4	123.1	142.0	109.8	135.2	127.1
October.....	124.2	123.4	142.4	110.5	135.5	128.0
November.....	123.8	123.5	142.6	111.4	136.9	128.3
December.....	122.4	123.7	142.7	111.4	136.9	127.9
1960^a						
January.....	121.6	123.3	142.8	110.2	136.9	127.5
February.....	120.8	123.2	142.9	109.8	137.0	127.2
March.....	119.4	123.4	142.9	110.4	137.0	126.9
April.....	120.9	123.5	143.3	110.8	137.1	127.5
May.....	120.2	123.1	143.5	110.8	137.6	127.4
June.....	120.8	123.0	143.8	110.9	137.7	127.6
July.....	120.5	123.0	143.9	110.8	137.6	127.5

Table 6 provides single commodity price relatives on the base 1949 = 100 for a number of important foods entering into the food component of the consumer price index. It also provides a record of average prices based on the actual average level of prices prevailing in October 1952 and calculated for the other months on the basis of the price relatives.

6.—Urban Average and Relative Retail Prices of Staple Foods 1950-59, and by Month 1953 to Mid-1960

(1949=100)

Year and Month	Beef, sirloin, per lb.		Pork, rib chops ¹ , per lb.		Lard, pure, per lb.		Eggs, "A", fresh, per doz.		Milk, fresh, per qt.	
	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative
	cts.		cts.		cts.		cts.		cts.	
1950.....	82.8	117.6	63.4	99.3	22.4	95.3	56.5	91.8	18.3	102.9
1951.....	101.0 ^r	143.5	73.2 ^r	114.8	28.4	121.1	71.7 ^r	116.5	19.6	110.0
1952.....	93.4	132.7	63.2	99.0	17.0	72.5	59.1	96.0	21.1	118.4
1953.....	79.6	113.0	72.5	113.7	20.8	88.4	67.6	109.9	21.1	118.5
1954.....	77.0	109.4	66.4 ¹	116.8 ¹	26.3	112.2	57.1	92.9	21.1	118.5
1955.....	80.0	113.6	61.5	108.2	22.4	95.2	61.5	99.9	21.1	118.5
1956.....	81.6	115.9	64.4	113.2	21.8	92.9	63.2	102.7	21.2	119.1
1957.....	84.3	119.7	74.6	131.1	25.6	109.0	56.0	91.0	22.5	126.2
1958.....	94.4	134.1	72.5	127.4	24.3	103.6	57.9	94.1	23.2	130.4
1959.....	101.0	143.5	67.6	118.9	18.8	80.3	54.4	88.4	23.4	131.0
1953										
January.....	87.4	124.1	70.9	124.7	25.1	106.9	54.1	88.0	23.2	130.3
February.....	89.3	126.8	71.9	126.4	24.8	105.7	50.1	81.5	23.2	130.3
March.....	90.4	128.4	71.4	125.5	24.6	104.8	55.0	89.4	23.2	130.3
April.....	93.3	132.5	72.7	127.8	24.7	105.2	56.6	92.0	23.2	130.3
May.....	95.8	136.1	72.8	128.0	24.6	104.8	53.4	86.8	23.2	130.3
June.....	97.7	138.8	77.5	136.2	24.6	104.8	54.9	89.3	23.2	130.3
July.....	96.6	137.2	77.1	135.5	24.5	104.4	62.1	100.9	23.2	130.3
August.....	96.1	136.5	77.6	136.4	24.4	104.0	58.3	94.8	23.2	130.3
September.....	95.5	135.7	70.5	124.0	24.2	103.1	65.9	107.2	23.2	130.3
October.....	96.0	136.4	70.0	123.1	23.8	101.4	63.8	103.7	23.2	130.3
November.....	96.0	136.4	68.9	121.2	23.5	100.1	63.8	103.8	23.3	130.9
December.....	98.7	140.2	68.5	120.5	23.1	98.4	56.5	91.9	23.3	130.9
1959										
January.....	104.9	149.0	68.8	121.0	22.5	95.9	55.0	89.4	23.3	130.9
February.....	102.4	145.5	68.8	121.0	20.6	87.8	51.7	84.1	23.3	130.9
March.....	100.1	142.1	68.0	119.6	20.2	86.1	52.6	85.5	23.3	130.9
April.....	97.6	138.6	67.2	118.2	19.9	84.8	53.3	86.7	23.3	130.9
May.....	96.4	136.9	66.3	116.6	18.7	79.7	51.5	83.8	23.3	130.9
June.....	97.8	138.9	66.6	117.1	18.1	77.1	51.0	82.9	23.3	130.9
July.....	99.4	141.2	67.2	118.2	17.8	75.8	52.3	85.0	23.3	130.9
August.....	103.2	146.5	68.2	119.9	17.7	75.4	54.5	88.6	23.3	130.9
September.....	104.6	148.5	67.7	119.1	17.7	75.4	55.4	90.1	23.3	130.9
October.....	104.4	148.3	67.8	119.2	17.4	74.1	64.3	104.6	23.7	133.1
November.....	100.8	143.2	67.5	118.7	17.4	74.1	62.7	101.9	23.7	133.1
December.....	100.6	142.9	67.3	118.4	18.1	77.1	48.3	78.6	23.7	133.1
1960										
January.....	100.4	142.6	66.4	116.8	18.1	77.1	41.9	68.2	23.7	133.1
February.....	95.6	135.8	65.6	115.4	17.9	76.3	41.2	66.9	23.7	133.1
March.....	93.5	132.8	63.5	111.7	18.3	78.0	47.4	77.1	23.7	133.1
April.....	91.9	130.5	63.3	111.4	18.4	78.4	56.1	91.2	23.7	133.1
May.....	94.2	133.8	63.6	111.9	18.9	80.5	50.0	81.3	23.7	133.1
June.....	95.6	135.8	65.1	114.5	19.2	81.8	46.8	76.1	23.7	133.1
July.....	98.3	139.6	74.0	130.1	19.8	84.4	52.1	84.7	23.7	133.1

¹ "Pork, fresh loins" prior to 1954.

**6.—Urban Average and Relative Retail Prices of Staple Foods 1950-59, and by
Month 1958 to Mid-1960—concluded**

Year and Month	Flour, per lb.		Tomatoes, canned, 2½'s, tin		Potatoes, 10 lb.		Sugar, granulated, per lb.		Bread, per lb.	
	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative	Average Price	Price Relative
	cts.		cts.		cts.		cts.		cts.	
1950.....	7.3	104.8	17.7	88.0	33.2	95.4	10.6	114.4	10.5	104.6
1951.....	7.4	106.9	23.1	115.0	34.8	99.9	12.0	129.8	11.7	115.5
1952.....	7.4	105.9	28.8	143.6	68.6	196.9	11.2	121.0	12.1	119.3
1953.....	7.6	108.9	24.4	121.8	39.0	111.8	10.0	107.8	12.3	121.5
1954.....	7.7	110.2	21.5	107.4	37.5	107.6	9.4	101.8	12.8	126.8
1955.....	7.4	106.4	26.3	131.3	46.8	134.5	9.2	99.7	12.8	126.4
1956.....	7.6	108.8	27.3	136.1	49.7	142.6	9.3	100.4	13.3	131.6
1957.....	7.9	113.3	29.1	144.8	42.1	130.8	12.3	133.1	14.3	141.4
1958.....	8.0	114.3	26.6	132.2	45.7	131.2	10.6	114.4	14.8	146.3
1959.....	8.4	119.9	27.3	136.1	48.9	140.3	9.4	101.4	15.2	150.9
1958										
January.....	7.9	113.3	26.5	132.0	40.5	116.3	11.7	126.8	14.3	141.8
February.....	7.9	113.3	26.4	131.5	42.4	121.7	11.4	123.6	14.3	141.8
March.....	7.9	113.3	26.3	131.0	50.0	143.6	11.2	121.4	14.5	143.8
April.....	7.9	113.3	26.3	131.0	59.1	169.8	11.0	119.2	14.7	145.8
May.....	8.0	114.8	28.4	131.5	55.5	159.4	10.7	116.0	14.7	145.8
June.....	8.0	114.8	26.4	131.5	49.8	143.0	10.5	113.8	14.8	146.8
July.....	8.0	114.8	26.4	131.5	50.2	144.2	10.3	111.6	14.8	146.8
August.....	8.0	114.8	26.8	133.5	43.7	125.5	10.1	109.5	14.8	146.8
September.....	8.0	114.8	26.9	134.0	40.8	117.1	10.0	108.4	15.0	148.8
October.....	8.0	114.8	26.7	133.0	37.9	108.8	9.9	107.3	15.0	148.8
November.....	8.0	114.8	26.7	133.0	38.8	111.4	9.9	107.3	15.0	148.8
December.....	8.0	114.8	26.8	133.5	39.7	114.0	9.9	107.3	15.1	149.9
1959										
January.....	8.1	116.2	26.9	134.0	40.5	116.3	10.0	108.4	15.2	150.9
February.....	8.2	117.6	26.9	134.0	39.9	114.5	10.0	108.4	15.2	150.9
March.....	8.2	117.6	26.9	134.0	40.1	115.1	9.8	108.2	15.2	150.9
April.....	8.3	119.1	27.3	136.0	39.3	112.8	9.8	108.2	15.2	150.9
May.....	8.3	119.1	27.5	137.0	42.9	123.2	9.4	101.9	15.2	150.9
June.....	8.3	119.1	27.6	137.5	58.1	166.9	9.2	99.7	15.2	150.9
July.....	8.3	119.1	27.8	138.5	70.9	203.4	9.1	98.6	15.2	150.9
August.....	8.4	120.5	27.9	139.0	59.4	170.6	9.0	97.6	15.2	150.9
September.....	8.5	122.0	27.7	138.0	48.7	139.8	9.0	97.6	15.2	150.9
October.....	8.5	122.0	27.3	136.0	48.9	126.0	9.0	97.6	15.2	150.9
November.....	8.6	123.4	27.0	134.5	50.4	144.7	9.0	97.6	15.2	150.9
December.....	8.6	123.4	27.1	135.0	52.2	149.9	9.0	97.6	15.2	150.9
1960										
January.....	8.6	123.4	27.2	135.5	53.6	153.9	9.1	98.6	15.2	150.9
February.....	8.7	124.8	27.5	137.0	57.8	166.0	9.1	98.6	15.2	150.9
March.....	8.6	123.4	27.5	137.0	57.3	164.6	9.1	98.6	15.2	150.9
April.....	8.7	124.8	27.6	137.5	66.7	191.4	9.2	99.7	15.6	154.9
May.....	8.7	124.8	27.7	138.0	70.5	202.3	9.2	99.7	15.6	154.9
June.....	8.7	124.8	27.9	139.0	76.0	218.1	9.3	100.8	15.7	155.9
July.....	8.7	124.8	28.0	139.5	69.8	200.3	9.3	100.8	15.7	155.9

Consumer Price Indexes for Regional Cities.—Table 7 gives regional consumer price indexes for ten cities or city combinations. These indexes do not show whether it costs more or less to live in one city than in another and should not be used for such comparison. Their function is to measure percentage changes in retail prices—over a certain time in each city or city combination—of a fixed basket of goods and services representing the level of consumption of a particular group of families.

7.—Consumer Price Indexes for Regional Cities 1950-59, and by Month 1958 to Mid-1960

(1949=100)

Year and Month	St. John's, Nfld. (1951 =100)	Halifax, N.S.	Saint John, N.B.	Mont- real, Que.	Ottawa, Ont.	Tor- onto, Ont.	Winni- peg, Man.	Saska- toon- Regina, Sask.	Ed- monton- Cal- gary, Alta.	Van- couver, B.C.
1950.....	..	102.1	103.3	103.7	103.1	104.1	103.8	102.2	103.9	103.6
1951.....	..	112.1	114.1	116.1	115.3	115.4	114.6	111.7	113.5	114.3
1952.....	103.5	115.3	117.4	117.6	116.8	117.5	116.1	112.8	114.8	117.4
1953.....	102.2	113.2	115.3	116.3	115.0	116.8	114.4	113.1	114.0	116.1
1954.....	102.8	114.1	116.6	116.8	116.2	118.3	115.3	114.2	114.9	117.4
1955.....	104.2	114.8	117.7	116.9	117.2	118.8	115.9	114.6	114.6	117.9
1956.....	106.8	116.1	118.8	118.4	119.2	120.6	117.2	115.8	115.7	119.6
1957.....	109.4	119.8	122.6	121.8	123.2	125.2	120.0	119.1	118.8	122.6
1958.....	112.0	122.9	125.3	125.5	125.5	128.6	123.0	122.0	121.4	125.6
1959.....	114.3	125.9	127.7	126.9	126.9	128.9	123.7	123.1	123.0	127.9
1958										
January.....	110.2	120.7	123.5	123.8	123.9	127.0	121.9	120.3	119.9	124.3
February.....	110.6	121.2	123.6	124.0	124.3	127.5	122.0	120.5	120.2	124.5
March.....	110.7	122.7	124.9	125.0	125.1	128.2	122.4	121.1	120.4	124.5
April.....	111.9	123.5	125.4	125.6	125.7	128.9	123.3	121.7	121.3	125.8
May.....	112.3	122.7	125.3	125.2	125.5	128.8	123.3	121.9	121.7	125.7
June.....	112.3	122.4	124.9	125.2	125.4	128.8	123.3	122.2	121.9	125.1
July.....	112.7	122.8	124.7	125.0	125.4	128.4	122.6	121.9	121.3	124.6
August.....	113.1	123.2	125.7	124.9	126.0	128.9	122.7	122.2	121.3	125.1
September.....	112.5	123.1	125.7	126.1	125.7	128.7	123.3	123.0	121.8	126.0
October.....	112.7	123.7	126.2	126.6	126.4	128.9	123.5	123.1	122.4	126.7
November.....	112.6	124.3	126.7	127.2	126.5	129.4	123.8	123.0	122.7	127.5
December.....	112.6	124.3	126.7	126.9	126.5	129.1	124.0	122.7	122.5	127.8
1959										
January.....	112.6	124.8	126.7	126.5	126.4	128.9	123.6	122.8	122.5	128.1
February.....	113.2	125.2	127.0	126.2	126.1	128.5	123.2	122.4	122.2	127.7
March.....	113.4	125.0	127.0	126.2	125.9	128.2	122.6	122.1	122.2	127.0
April.....	113.9	125.1	126.8	125.6	125.8	127.9	122.7	121.9	122.0	127.1
May.....	114.2	125.4	126.9	125.9	126.0	128.1	122.8	122.1	122.0	126.8
June.....	114.7	125.6	126.9	126.1	126.2	128.5	123.1	122.6	122.2	127.1
July.....	115.0	125.5	127.0	126.2	126.6	128.1	123.1	122.7	122.6	126.7
August.....	116.0	126.4	128.1	126.9	127.2	128.8	123.4	123.5	122.8	127.2
September.....	114.9	126.3	128.3	127.8	127.6	129.4	123.9	124.2	124.0	128.3
October.....	114.5	127.0	129.0	127.8	128.6	130.3	125.0	124.6	124.5	129.6
November.....	114.6	127.7	129.2	128.7	128.6	130.5	125.7	124.6	124.7	129.8
December.....	114.6	127.3	129.1	128.7	128.3	130.1	125.4	124.0	124.1	129.6
1960										
January.....	114.7	127.1	129.1	127.8	128.1	129.7	124.7	123.8	123.6	129.3
February.....	114.8	127.0	129.1	127.5	127.6	129.7	124.1	123.5	123.2	129.1
March.....	114.5	126.7	128.9	126.5	127.4	129.2	124.0	123.4	123.3	128.7
April.....	115.6	127.0	129.1	127.6	128.0	129.7	124.7	123.6	123.4	128.2
May.....	115.9	126.8	128.6	127.2	127.7	129.8	124.8	123.4	123.3	128.1
June.....	116.2	127.0	128.6	127.8	128.6	130.2	125.0	123.7	123.2	127.7
July.....	116.5	126.4	128.6	127.2	128.2	130.1	125.4	124.0	123.6	127.5

World Retail Price Indexes.—In order to place changes in Canadian retail prices in perspective with those occurring elsewhere, Table 8 provides retail price indexes for selected countries for 1956, 1957 and 1958. These indexes measure price change only within each country and should not be used to compare actual levels of living costs from country to country.

8.—Index Numbers of Retail Prices in Canada and Other Countries, 1956-58

(BASE: 1953=100. SOURCE: *United Nations Monthly Bulletin of Statistics*, November 1957 and 1958.)

Country	1956	1957	1958	Country	1956	1957	1958
Belgium.....	104	107	108	Iran.....	130	139	140
Brazil.....	173	206	237	Israel.....	127	135	139
Canada.....	102	106	108	Korea, South.....	284	350	339
Chile.....	471	627	752	Netherlands.....	108	115	117
Denmark.....	113	116	117	New Zealand.....	111	113	118
Dominican Republic.....	99	104	102	Norway.....	109	112	118
Egypt.....	98	102	102	Sweden.....	109	113	119
France (Paris).....	103	106	122	Switzerland.....	103	105	107
Germany, Federal Republic of.....	105	106	110	Turkey.....	136	152	171
Greece.....	126	129	131	United Kingdom.....	112	116	119
India.....	99	104	109	United States.....	102	105	108

Section 3.—Index Numbers of Security Prices

Investors price indexes for common stocks are calculated on the 1935-39 base and published weekly and monthly for a sample of issues, broadly classified under the headings: industrials, public utilities and banks. Within the first category the sample is further classified by industry. Weekly and monthly indexes of mining stocks including both golds and base metals are calculated and published separately, as are monthly indexes of preferred stocks.

For purposes of index calculation, Thursday closing prices are used for the issues of companies listed on either or both the Montreal and Toronto stock exchanges. Weights are applied to each issue on the basis of the number of shares currently outstanding. The list of stocks included in the various security series, currently totalling 92 for the investors index and 28 for the mining stocks index, are revised annually so that issues which have become important in stock market activity may be included and those of declining interest removed. Provision is also made for stock splits, mergers and the exercise of 'rights'. The indexes are designed to reflect weekly and monthly changes of interest to the investor rather than day-to-day changes of more speculative interest. For that reason the historical record of indexes dating back to January 1914 on a monthly basis* is of significance in any analysis of the degree of fluctuation in stock prices through time.

Investors Index.—A continuation of the strong upward trend inaugurated with the inception of the bull market in December 1953 culminated in an all-time peak in the investors total index of 291.8 in August 1956; the September 1929 peak was 197.8. Subsequent sharp declines which brought the level to 262.3 by November 1956, were reversed in December, and by May 1957 losses had been largely recouped. At mid-1957 prices broke sharply and continued in a seven-month slide to 215.4 in January 1958. At this point the index swung upward to 262.1 in October, continued slowly higher to 279.3 in July 1959, broke sharply in September, and in December rallied once more to close the year at 261.5, for a net loss of 1.7 p.c. from January 1959. Among major groups the January-December changes were: industrials -2.2 p.c., utilities -4.2 p.c., banks +6.0 p.c. Sub-group declines were led by oils, food and allied products and transportation, while gains were headed by industrial mines, machinery and equipment, pulp and paper, textiles and clothing, and milling.

However, during the first half of 1960 the downward trend was again evident, the index fluctuating from 259.2 in January to 243.6 by July, a decrease of 6.0 p.c. In the period January-July 1960, changes among major groups were: industrials -6.6 p.c., utilities -1.9 p.c., banks -6.4 p.c., mining -16.5 p.c. and preferred stocks +6.5 p.c. Sub-group increases were apparent only in telephone, food and allied products, and industrial mines; declines were led by golds, building materials, and machinery and equipment.

* Available on request from Prices Division, Dominion Bureau of Statistics.

9.—Investors Index Numbers of Common Stocks, by Month, 1958 to Mid-1960

(1935-39=100)

Year and Month	Industrials							Public Utilities			Banks, Total	In- vestors Com- posite Index				
	Machinery and Equip- ment	Pulp Paper	Milling	Oils	Text- iles and Cloth- ing	Food and Allied Prod- ucts	Bever- ages	Build- ing Ma- terials	Indus- trial Mines	Indus- tri- als, Total			Trans- por- tation	Tele- phone	Power and Trac- tion	Utili- ties, Total
1958																
January.....	579.2	796.2	120.5	187.5	148.4	206.2	490.2	384.9	153.1	222.2	252.2	104.6	202.9	178.1	233.3	215.4
February.....	570.4	832.1	133.4	184.4	145.7	212.8	509.1	396.6	155.9	223.8	285.6	108.1	207.2	182.5	245.2	218.3
March.....	609.2	840.8	129.7	184.4	157.7	217.2	513.8	415.3	158.8	228.7	290.6	107.5	208.5	183.1	243.5	221.5
April.....	589.5	802.3	129.5	186.9	166.7	219.5	511.3	417.6	160.8	224.0	288.1	105.9	205.7	181.9	237.5	218.2
May.....	586.1	818.6	141.2	203.6	162.7	223.7	547.1	433.0	154.2	235.2	299.0	105.9	208.2	183.0	258.1	227.8
June.....	570.2	855.3	143.4	218.0	159.9	243.0	562.6	455.0	162.3	246.4	312.2	107.6	212.2	187.6	266.6	237.8
July.....	585.8	885.8	145.6	225.0	156.9	251.5	584.6	466.6	166.1	253.3	321.2	108.3	214.1	189.5	275.4	243.8
August.....	631.4	936.3	146.8	228.3	159.7	254.7	587.8	479.4	172.5	261.8	324.9	109.6	225.1	194.4	280.4	251.6
September.....	651.4	955.2	152.8	225.6	174.9	252.6	608.4	486.9	176.8	264.9	340.5	109.8	230.7	198.2	287.8	255.0
October.....	703.1	1,005.5	176.6	224.0	180.4	260.6	623.6	493.5	185.8	272.8	340.5	108.6	230.1	197.2	305.0	262.1
November.....	684.1	1,047.4	204.6	215.3	192.5	271.8	644.9	499.2	185.4	271.2	346.6	109.0	228.6	197.7	318.0	262.0
December.....	673.1	1,043.0	199.2	210.0	191.6	279.6	635.2	494.0	180.6	266.8	341.0	108.3	226.6	195.8	323.0	259.1
1959																
January.....	690.9	1,077.2	198.5	216.7	194.9	286.4	666.7	518.6	185.2	275.4	345.9	109.1	232.4	198.9	327.6	266.0
February.....	674.4	1,131.8	200.6	215.4	205.0	302.6	678.4	535.3	191.0	279.1	355.6	112.2	231.4	202.0	335.8	269.9
March.....	682.7	1,139.8	199.2	209.6	213.9	301.8	666.0	544.7	194.2	278.3	351.1	109.4	237.1	202.6	345.9	270.2
April.....	666.2	1,117.4	198.4	204.8	215.9	299.6	662.1	529.8	186.0	271.7	350.7	109.5	237.0	201.3	357.1	265.8
May.....	686.6	1,109.8	211.0	200.0	215.4	292.0	670.5	526.6	189.2	271.5	345.8	115.7	232.9	204.3	370.4	267.2
June.....	776.4	1,119.6	230.9	189.9	219.8	273.7	677.7	537.1	192.4	274.4	343.0	115.1	227.0	201.6	379.0	269.5
July.....	834.3	1,183.7	239.9	192.9	227.5	279.2	702.7	580.1	202.2	286.2	345.8	115.4	229.8	203.0	387.5	279.3
August.....	794.0	1,169.2	232.0	195.0	230.1	284.2	702.4	564.6	201.9	282.0	332.6	113.9	228.3	199.8	373.7	274.6
September.....	741.3	1,086.0	221.2	176.7	211.4	251.7	656.7	523.0	187.3	261.6	312.8	106.6	211.7	188.9	347.6	255.4
October.....	744.9	1,090.8	207.5	188.4	205.7	245.1	652.5	514.3	187.0	257.4	307.3	109.1	210.2	187.3	354.7	252.5
November.....	706.3	1,123.5	209.8	188.4	206.4	232.4	668.3	529.1	197.1	259.2	285.7	110.9	208.7	186.9	342.5	252.8
December.....	744.7	1,174.5	208.5	174.8	209.7	231.2	667.5	536.1	210.9	269.3	286.3	114.9	210.5	190.6	347.2	261.5
1960																
January.....	741.9	1,156.8	204.2	180.2	203.2	224.5	656.0	518.0	205.5	267.6	302.0	115.6	207.9	191.0	332.8	259.2
February.....	713.0	1,080.0	194.0	173.8	197.2	216.8	634.6	488.7	203.1	257.9	298.6	115.8	195.3	186.8	316.3	249.0
March.....	671.4	1,068.1	181.5	170.8	190.0	215.8	611.0	462.2	195.6	249.3	287.6	116.9	189.8	184.5	305.8	243.3
April.....	682.2	1,101.4	181.8	173.2	189.1	230.0	605.6	469.2	206.9	256.7	306.4	119.3	188.1	183.2	309.1	248.8
May.....	699.2	1,124.7	184.8	168.0	190.9	224.5	632.5	466.7	217.6	257.4	304.8	119.0	189.2	180.1	308.8	249.2
June.....	685.7	1,156.6	190.6	165.4	189.5	228.0	643.3	455.8	217.6	258.3	302.2	120.4	194.8	190.6	317.7	251.0
July.....	636.7	1,111.7	182.5	161.9	183.6	233.6	638.9	423.2	213.0	249.8	287.6	121.0	188.8	187.3	311.5	243.6

Mining Stocks.—Mining stocks continued the upward trend evident throughout 1958 to reach 126.6 at March 1959, after which weakness set in which lowered the index to 112.8 in December, down 2.8 p.c. from the previous December and 10.9 p.c. from March. Base metals closed the year at 182.8, down 7.4 p.c. from December and 16.7 p.c. below the April high of 201.2. Golds showed a small net gain of 2.1 p.c. in the annual comparison and a smaller loss of 5.7 p.c. from the high of 87.3 in July.

10.—Weighted Index Numbers of Prices of Mining Stocks, by Month, 1956 to Mid-1960

(1935-39=100)

Year and Month	Golds	Base Metals	Com- posite	Year and Month	Golds	Base Metals	Com- posite
1956				1958—concluded			
January.....	75.8	238.1	125.2	May.....	72.5	160.7	99.3
February.....	76.7	235.8	125.1	June.....	73.8	173.3	104.1
March.....	79.4	260.2	134.4	July.....	72.1	174.7	103.2
April.....	78.8	269.7	136.8	August.....	74.3	179.3	106.2
May.....	78.8	268.5	136.5	September.....	73.8	182.0	106.7
June.....	76.7	273.1	136.4	October.....	74.7	205.1	114.4
July.....	79.5	291.5	144.0	November.....	77.9	208.8	117.6
August.....	79.5	301.9	147.1	December.....	80.6	197.5	116.1
September.....	74.1	282.2	137.4	1959			
October.....	72.5	273.3	133.5	January.....	85.6	211.2	123.7
November.....	68.6	262.2	127.4	February.....	85.7	214.8	124.9
December.....	68.9	267.8	129.4	March.....	86.1	219.4	126.6
1957				April.....	85.5	201.2	120.6
January.....	70.6	265.7	129.9	May.....	87.0	194.0	119.5
February.....	69.3	243.2	122.2	June.....	87.0	193.4	119.4
March.....	68.1	249.6	123.3	July.....	87.3	196.9	120.6
April.....	72.4	255.4	128.0	August.....	86.1	196.9	119.8
May.....	76.2	234.2	124.2	September.....	82.0	179.2	111.5
June.....	80.6	227.7	125.4	October.....	82.7	179.9	112.2
July.....	79.3	222.2	122.8	November.....	82.6	181.3	112.6
August.....	73.2	192.6	109.5	December.....	82.3	182.8	112.8
September.....	71.4	180.7	104.6	1960			
October.....	63.4	167.2	95.0	January.....	82.4	187.8	114.4
November.....	61.2	167.0	93.4	February.....	82.0	175.6	110.4
December.....	60.0	156.8	89.4	March.....	82.5	164.4	107.4
1958				April.....	78.4	166.4	105.1
January.....	64.0	154.6	91.5	May.....	67.8	167.2	98.0
February.....	68.3	157.2	95.3	June.....	64.9	167.4	96.0
March.....	67.8	161.7	96.4	July.....	64.7	166.0	95.5
April.....	69.0	155.0	95.2				

Preferred Stocks.—The index of preferred stocks showed little change in 1959 until August, when a downward trend set in which by December had brought the index to 149.9, down 6.2 p.c. from December 1958. By February 1960 the index had declined to its lowest point since November 1957 and then began to rise, reaching 158.7 by July.

11.—Index Numbers of Preferred Stocks, by Month, 1950 to Mid-1960

(1935-39=100)

NOTE.—Figures for 1927-45 are given in the 1948-49 Year Book, p. 953, and for 1946-49 in the 1956 edition, p. 1045.

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Yearly Av.
1950.....	152.4	153.0	153.7	154.4	157.3	158.2	154.6	155.6	158.2	161.1	161.1	160.2	156.7
1951.....	166.0	169.3	166.0	165.2	164.3	162.2	163.1	165.2	166.4	164.2	162.8	159.5	164.5
1952.....	161.4	160.6	159.5	157.2	157.2	157.7	159.8	163.6	162.4	161.2	160.3	160.7	160.1
1953.....	161.0	161.6	163.6	161.6	162.9	163.0	163.8	164.3	162.0	161.0	161.6	161.7	162.3
1954.....	162.6	163.6	165.4	168.0	169.7	170.7	171.3	173.0	173.4	174.1	175.4	175.4	170.2
1955.....	175.6	178.0	176.2	175.4	176.1	177.9	179.5	179.9	179.0	179.2	176.6	173.9	177.2
1956.....	175.5	175.3	173.6	171.1	167.7	166.2	167.5	166.1	161.7	168.7	157.0	154.4	166.2
1957.....	155.9	156.4	154.8	153.4	153.1	150.8	150.0	149.4	147.3	146.1	147.6	151.1	151.3
1958.....	154.0	156.4	157.5	158.5	161.6	163.9	162.4	163.4	163.9	162.7	162.7	159.8	160.6
1959.....	158.1	159.5	159.8	160.0	161.9	160.5	160.8	159.2	155.3	151.0	150.1	149.9	157.2
1960.....	149.0	148.7	153.0	153.3	154.2	157.7	158.7

CHAPTER XXI.—FOREIGN TRADE

CONSPECTUS

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NOTE.—The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

The subject of foreign trade covers more than the treatment of imports and exports of commodities, important though this is. In its broader sense foreign trade is made up of the total international exchanges of goods, services, securities and other financial exchanges, all of which are presented in their proper relationship in this Chapter. Following Part I, which is a review of Canada's trade during recent years, Part II gives detailed statistics of external commodity trade. Part III summarizes external transactions from the standpoint of the balance of international payments. Part IV outlines the various ways in which the Federal Government promotes and encourages trade relationships, and contains a brief review of the Canadian tariff structure.

PART I.—RECENT DEVELOPMENTS IN CANADA'S FOREIGN TRADE*

Canada's foreign trade rose to a new high level in 1959, reflecting generally prosperous economic conditions at home and abroad. Over the past few years, the sharp expansion of Canadian external trade in 1955 and 1956 was associated with strong foreign demand for most mineral and forest exports as well as with the unprecedented progress in the exploration and development of Canada's natural resources; at the same time, the accelerated pace of capital investment and consumer expenditure was responsible for the marked upturn in imports. But in 1957 and 1958 foreign markets lost some of their previous strength and domestic economic activity slackened. Canada's trade levelled off in 1957, a slight increase in the export total being somewhat more than offset by a small decline in imports. In 1958, exports were maintained in the face of generally unfavourable world conditions, partly owing to somewhat fortuitous circumstances, but imports were further reduced by 7.7 p.c.

* Prepared in the External Trade Section, International Trade Division, Dominion Bureau of Statistics.

In 1959, influenced mainly by rising demand for industrial materials in the United States, total exports rose 5.1 p.c. to \$5,179,400,000, the highest value on record. Imports, with most of the increase taking place in capital equipment and consumer durables, rose 8.9 p.c. to \$5,654,400,000 and were only fractionally below the record value reached in 1956. The import balance, which in 1957 declined moderately from the 1956 peak of \$842,300,000 and in 1958 fell markedly to \$266,100,000, increased in 1959 to \$475,000,000.

The export price index rose 2.0 p.c. to 123.0 (1948=100) in 1959, while the average import price level declined by 1.6 p.c. to 114.6, with the resulting improvement in the terms of trade. Since the average export price level went up only slightly, a greater part of the increase in the value of exports can be attributed to a larger volume of export shipments, which was some 3 p.c. higher than in 1958. On the other hand, in view of the small decline in the import price index, the volume of imports rose by some 11 p.c., even more than the value of import shipments. On a seasonally adjusted basis, total exports declined in the first quarter of 1959 from the level of the fourth quarter of 1958, rose in the second quarter of the year, decreased very slightly in the third and were at their highest recorded level in the fourth quarter of 1959. Seasonally adjusted imports were at about the same level in the first quarter of 1959 as in the last quarter of 1958, rose in the second quarter and, following a very slight decline in the third, moved up a little in the fourth quarter of 1959 to just under the level of the second three-month period of the year.

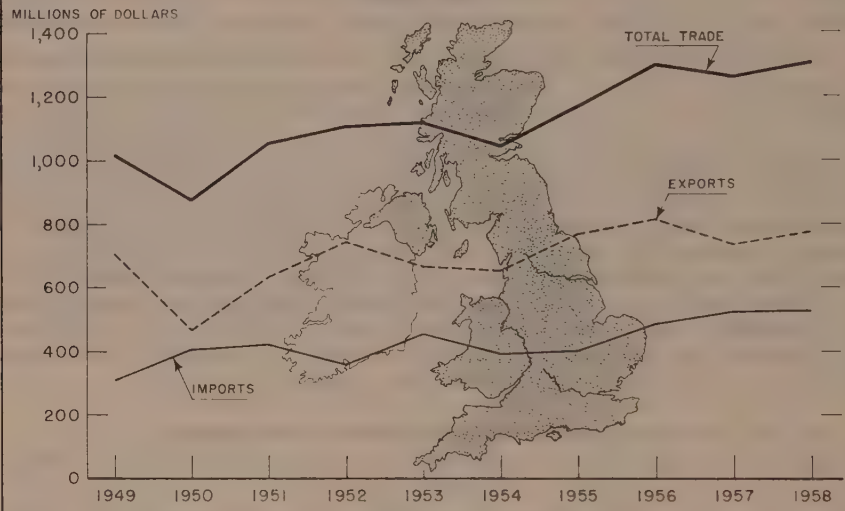
1.—Summary Statistics of Canadian Trade, 1955-59

Item	1955	1956	1957	1958	1959	Change	
						1957 to 1958	1958 to 1959
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	p.c.	p.c.
Value of Trade—							
Domestic exports.....	4,281.8	4,789.7	4,824.2	4,823.3	5,060.7	1	+ 4.9
Re-exports.....	69.5	73.4	95.3	102.9	118.7	...	...
Imports.....	4,712.4	5,705.4	5,623.4	5,192.4	5,654.4	- 7.7	+ 8.9
Total Trade.....	9,063.7	10,568.6	10,542.9	10,118.6	10,833.8	- 4.0	+ 7.1
Trade Balance.....	-361.1	-842.3	-703.9	-266.1	-475.0	...	...
Price Indexes (1948=100)—							
Domestic exports.....	117.7	121.4	121.0	120.6	123.0	- 0.3	+ 2.0
Imports.....	110.5	113.0	116.4	116.5	114.6	+ 0.1	- 1.6
Volume Indexes (1948=100)—							
Domestic exports.....	118.3	128.3	129.7	130.3	134.1	+ 0.5	+ 2.9
Imports.....	160.3	190.0	182.5	168.3	186.2	- 7.8	+10.6

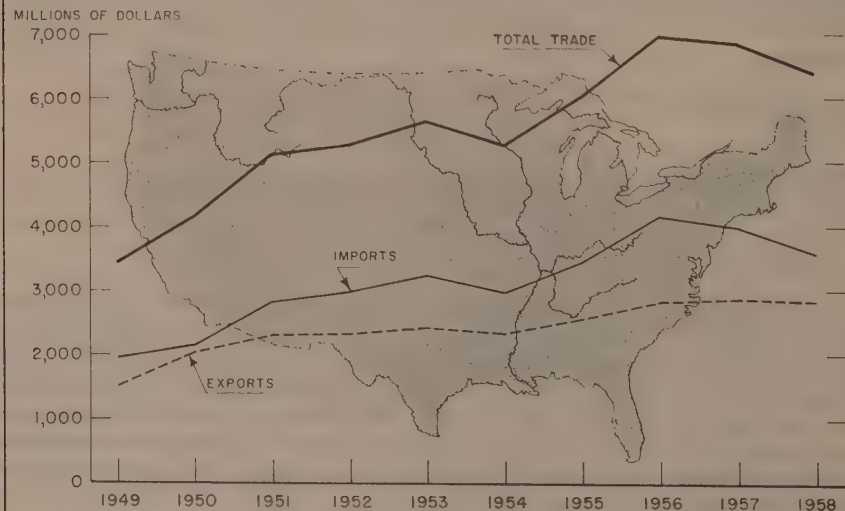
¹ Less than 0.1 p.c.

The increase in the value of exports to the United States in 1959 exceeded that in the export total to all countries by about one-sixth. Exports to the United Kingdom more than held their own and an increase of one-third was registered in exports to Japan. However, there was some decline in exports to the Commonwealth and Latin America and a more marked drop in exports to Europe. The increase in imports from the United States accounted for over half of that in the import total from all countries. Considerable increases were registered for imports from the United Kingdom, the Commonwealth and Europe and imports from Japan were almost 50 p.c. higher, but imports from Latin America were slightly reduced.

CANADIAN TRADE WITH THE UNITED KINGDOM,
1949-58



CANADIAN TRADE WITH THE UNITED STATES,
1949-58



In relative terms, in 1959 the United States provided a market for 62.1 p.c. of Canada's total exports as compared with 59.2 p.c. in 1958. The proportion of Canadian exports going to the United Kingdom declined from 15.8 p.c. to 15.4 p.c., and the export shares of the Commonwealth, Europe and Latin America were reduced, respectively, from 6.0 p.c. to 5.5 p.c., from 11.6 p.c. to 9.5 p.c. and from 3.7 p.c. to 3.4 p.c. The United States was in 1959 the source of 67.7 p.c. of Canada's imports as against 68.8 p.c. in 1958. The proportion of Canadian imports coming from the United Kingdom went up from 10.2 p.c. to 10.5 p.c. The import share of the Commonwealth rose from 4.1 p.c. to 4.4 p.c., the share of Europe remained unchanged at 6.2 p.c. and the share of Latin America was reduced from 6.7 p.c. to 6.0 p.c.

The importance of foreign trade to the Canadian economy is reflected in the relatively high ratio of exports and imports to the gross national product, as well as in the leading position this country holds among the major trading nations of the world. On a per capita basis, Canada normally ranks ahead of almost every other country—in 1957 Canada was second only to New Zealand and in 1958 to Belgium and Luxembourg. In absolute terms, in recent years Canada has ranked fourth in value of total trade, following the United States, the United Kingdom and the Federal Republic of Germany.

2.—World Trade, by Leading Countries, 1957 and 1958

SOURCES: International Monetary Fund, *International Financial Statistics*, September 1959; and United Nations Statistical Office, *Population and Vital Statistics Reports*, Series A, Vol. XI, Nos. 2 and 3.

Country	1957			1958			Population mid-1958	Trade per Capita	
	Exports f.o.b.	Imports c.i.f.	Total Trade	Exports f.o.b.	Imports c.i.f.	Total Trade		1957	1958
	U.S.\$ '000,000	U.S.\$ '000,000	U.S.\$ '000,000	U.S.\$ '000,000	U.S.\$ '000,000	U.S.\$ '000,000		U.S.\$	U.S.\$
United States.....	20,862	14,297	35,159	17,862	13,986	31,848	177,184	202 ¹	180 ¹
United Kingdom.....	9,684	11,412	21,096	9,395	10,583	19,978	51,925	408	385
Germany, Federal Republic	8,575	7,499	16,074	8,807	7,361	16,168	54,380	299	297
Canada.....	5,456	6,346	11,802	5,440	5,790	11,230	17,043	711	659
France.....	5,111	6,174	11,285	5,122	5,604	10,726	44,521	256	241
Netherlands.....	3,098	4,105	7,203	3,218	3,625	6,843	11,173	654	612
Belgium and Luxembourg...	3,186	3,432	6,618	3,046	3,129	6,175	9,373	711	659
Japan.....	2,858	4,284	7,142	2,877	3,033	5,910	91,760	79	64
Italy.....	2,550	3,674	6,224	2,536	3,169	5,705	48,739	128	117
Sweden.....	2,137	2,428	4,565	2,088	2,366	4,454	7,415	619	601
Venezuela.....	2,366	1,868	4,234	2,321	1,599	3,920	6,320	690	620
Australia.....	2,203	1,945	4,148	1,663	2,057	3,720	9,846	430	378
World Total².....	101,031	103,239	203,270	96,068	100,727	196,795	1,905,000	113	103

¹ Includes military aid extended to other countries. ² Excludes China, Union of Soviet Socialist Republics, and the communist countries of Eastern Europe (except Yugoslavia).

Main Commodity Changes.—Exports.—Metals and minerals and forest products contributed most to the over-all export increase in 1959. Exports of iron and products, stimulated by the prolonged steel strike in the United States, registered the largest relative gain of 30.3 p.c. among the main commodity groups and reached a record postwar value of \$563,300,000. In contrast to 1958 when all the leading iron and steel products except farm implements lost ground, increases took place in 1959 in every major commodity of this group. Rolling-mill products, which declined somewhat in the previous year, increased in value by 68.1 p.c. to \$53,500,000. Iron ore, which fell by almost one-third in 1958, went up by 46.6 p.c. to \$157,800,000 and accounted for over one-fifth of the total export gain in 1959. Farm implements and machinery rose by 17.5 p.c. to \$110,200,000 or at about half the rate of increase in the previous year. Engines and boilers, up by 17.9 p.c., exceeded somewhat the level of 1957. Non-farm machinery showed some increase but not nearly enough to regain the ground lost in 1958. Pigs, ingots, blooms and billets

rose by 34.4 p.c., which was sufficient to recover only about half of the decline in the previous year. There was a gain of over one-quarter for automobile parts, and exports of tubes, pipes and fittings, relatively small until recently, trebled in value to \$16,500,000.

Exports of non-ferrous metals in 1959 stood at \$1,114,600,000 with a gain of 8.9 p.c. over the previous year, or at twice the rate of increase in 1958. Uranium ores and concentrates, at \$311,900,000, were, as in 1958, the leading mineral export, but gained only 12.8 p.c. as against 116.1 p.c. in 1958. The United States absorbed 90 p.c. of the total and the United Kingdom most of the remainder. Copper went up by 17.6 p.c. to \$158,800,000, more than compensating for the decline of the previous year, with a substantial upturn in the value of exports to the United States but some decrease in the value of exports to all other countries as a group. There were moderate value increases for aluminum to \$230,700,000 and nickel to \$226,900,000 and very small declines for zinc and lead. Among the leading non-ferrous metals and products, electrical apparatus showed the largest relative gain of 30.6 p.c. to \$32,600,000.

Non-metallic minerals and products experienced in 1958 the largest relative decline of 29.9 p.c. among the major commodity groups; crude petroleum, with close to a 50-p.c. fall from the 1957 peak, was responsible for about two-thirds of that decline. In 1959 shipments of petroleum were maintained in a situation of over-supply among the leading producing areas such as the United States, Venezuela and the Middle East. Exports of both asbestos and abrasives rose by over one-fifth, the former sufficiently to exceed the level of 1957 and to set a new value record. The non-metallic minerals and products group as a whole went up by 17.5 p.c. to reach \$294,200,000.

In 1959, forest products were again the largest major commodity group. The 7.2-p.c. increase for the group as a whole more than offset the drop experienced in 1958 and brought the value up to \$1,516,000,000, a level only slightly below the record value of 1955. Newsprint paper at \$722,300,000, as usual the largest export commodity, rose 4.6 p.c. which more than made up for the decline in the previous year. Lumber and timber rose only slightly in 1958 but went up by 10.3 p.c. to \$323,700,000 in 1959; wood pulp, which fell slightly in 1958, rose to \$311,300,000 in 1959, exceeding the level of 1957 by some 6 p.c. Following very small increases in 1958, plywoods and veneers and shingles increased in 1959 by 43.6 p.c. and 8.0 p.c., respectively. Exports of pulpwood were again lower, but declined only at about half the rate of decline in 1958.

The chemicals group at \$201,700,000 again showed a small over-all gain, with increases for fertilizers and synthetic plastics. Exports of fibres, textiles and products rose 21.0 p.c. to \$25,000,000, regaining about two-thirds of the 1958 decline, but the miscellaneous commodities group fell sharply as a result of a \$84,000,000 drop in exports of aircraft; exports of aircraft in 1958 were boosted by special shipments of military aircraft to West Germany and Belgium.

Exports of agricultural and vegetable products declined by 1.9 p.c. to \$368,900,000. Wheat, which in 1958 rose by 17.3 p.c. to \$446,078,000, held close to that level in 1959 when it amounted to \$441,800,000, and was again the second largest export. Shipments to the United Kingdom, accounting for one-third of the total, were slightly lower and there was a marked drop in shipments to India, the Netherlands and Switzerland; on the other hand, exports to West Germany and Japan were higher. Exports of barley fell by 15.1 p.c. to under the level of 1957 and there were also some declines for wheat flour and seeds, including flaxseed and rapeseed. Exports of tobacco were 35.5 p.c. higher and those of whisky rose 11.4 p.c.

Exports of animals and animal products declined 10.5 p.c. to \$356,000,000 in 1959, following a 31.7-p.c. increase in 1958. Shipments of beef cattle, almost all to the United States, which rose from \$600,000 in 1956 to \$42,000,000 in the next year and then more than doubled in 1958 to \$84,000,000, were reduced in 1959 to about level of 1957. There was an over-all decline of about 5 p.c. for fish and fishery products (including fresh and frozen, cured fish and canned fish), although some gain was shown for molluscs and crustaceans. Exports of fresh pork also declined somewhat after having gone up by 85

p.c. in 1958. However, shipments of powdered, condensed and evaporated milk were 58.0 p.c. higher in value following a similar gain in 1958 and there were large increases for butter, cheese and eggs, as well as a slightly higher value for fur skins.

Imports.—The import increase in 1959 was widespread, affecting all the major commodity groups and most leading products. The iron and steel group, with imports of \$2,092,100,000, accounted for about two-thirds of the over-all import decline in 1958 and was responsible for about half the gain in 1959. Among the leading imports in this group, passenger automobiles and farm implements, the only commodities which went counter to the general downtrend in 1958, continued to increase in 1959. Passenger automobiles rose 41.0 p.c. to \$199,600,000, as against 32.8 p.c. in 1958, British and European cars accounting for most of the increase. Farm implements and machinery went up by 25.6 p.c. as compared with 8.6 p.c. in 1958. Non-farm machinery, as usual the largest import category, increased 9.8 p.c. to \$585,200,000 and recovered about half of the decline occurring in 1958. Automobile parts rose by 20 p.c. to \$288,600,000 and more than offset the 1958 decrease. Tractors and parts, which declined by 8.1 p.c. in 1958, advanced in 1959 by 46.7 p.c. to \$172,100,000. Imports of engines and boilers remained unchanged, but slight increases in cooking and heating apparatus and tools and a substantial increase in freight automobiles brought these three categories somewhat above their 1957 levels. Rolling-mill products, at \$131,300,000, continued to decline from the peak of 1956 and returned to slightly above the level of 1955, and pipes, tubes and fittings registered their second consecutive decline dropping to \$55,300,000 from the record value of \$147,700,000 reached in 1957.

The non-metallic minerals and products group, which fell in 1958 by 12.2 p.c. mainly because of a general decline in fuel imports, went up in 1959 by 3.3 p.c. to \$705,600,000. Shipments of petroleum at \$277,500,000, the third ranking import, were virtually unchanged and the same situation prevailed for gasoline. Fuel oils more than made up for a decline in 1958, but imports of bituminous and anthracite coal were lower. Largely as a result of a 12.2-p.c. increase to \$269,400,000 for electrical apparatus and a more moderate increase for bauxite and alumina, the non-ferrous metals group rose by 9.0 p.c. to \$471,300,000 but was still below the level of 1957.

The agricultural and vegetable products group, which registered little change from 1957 to 1958, rose in 1959 by 4.8 p.c. to \$683,800,000. Imports of crude rubber, with a value increase of 69.2 p.c. to \$52,100,000, contributed about two-thirds of the increase for the group as a whole. There were also gains for fruit juices and syrups, and soybeans. At \$56,600,000, imports of raw sugar were somewhat lower in value, following a 22.5-p.c. drop in 1958, and there was also a further decline for coffee. A slight decrease took place in citrus fruits, but there was little change in value of fresh vegetables imported. Imports in the animal products group increased for the fifth consecutive year, with a gain of 13.7 p.c. to \$146,600,000.

Imports in the fibres, textiles and products group went up by 8.5 p.c. to \$420,200,000, following a 5.2-p.c. decline in 1958. The largest increase of 26.4 p.c. took place in apparel, and there were moderate advances in cotton fabrics and synthetic fabrics. Imports of wool fabrics were almost unchanged and those of raw wool increased, but there were lower purchases of raw cotton. The chemicals and allied products group showed a 12.6-p.c. increase to \$327,000,000 in 1959, as against a 1.2-p.c. decrease in 1958, with gains in synthetic plastics and drugs and medicines. The wood, wood products and paper group went up at a much higher rate than in 1958, showing an increase of 15.6 p.c. to \$272,300,000. There were higher imports of paper products and logs, of timber and lumber, and of books, newspapers and magazines. In the miscellaneous products group, an almost 20-p.c. drop for aircraft was offset by gains in refrigerators and freezers, in medical, optical and dental goods and in scientific equipment.

International Background.—The international economy in the postwar years up to the outbreak of the Korean war was conditioned by problems of reconstruction and international economic disequilibrium, associated with inadequate supplies to satisfy

the pent-up demand for both investment and consumer goods as well as with an uneven rate of recovery and growth especially between the industrial and non-industrial countries. While these problems, as reflected in strong world-wide inflationary pressures and widespread balance of payments difficulties particularly among non-dollar countries, caused serious concern, the basic growth factors were also in evidence even in the immediate postwar years. Following the boom and collapse in raw materials which accompanied the Korean hostilities and the subsequent period of readjustment, the world economy has entered since 1953 on a more broadly based phase of expansion, only briefly interrupted by the relatively mild recessions of 1945-55 and 1957-58. During 1953-57, world trade rose by nearly one-third and world industrial production by about one-fifth. The slowdown in economic activity which became apparent on an international scale in the latter part of 1957 and carried forward into 1958, resulted in some decline in industrial production and trade. But in 1959 economic conditions were again generally buoyant, the recovery being especially in evidence in Western Europe, Japan, the United States and Canada, and world trade exceeded the level of 1957 by some 6 p.c. There has also been some general improvement for the primary producing countries under the influence of the sustained flow of aid and investment and as commodity prices, in which the decline from the 1955-56 peak came to a halt in 1958, showed a moderate strengthening in 1959.

As a consequence of the over-all expansion of the world economy in recent years, there has taken place a general strengthening of the international balance of payments and a gradual disappearance of the so-called dollar shortage. In every year since 1950, with the exception of 1957, the United States has had an over-all payments deficit, the net outflow of private capital and government grants and loans exceeding the export surplus. This pattern became accentuated in the past two years as a result of declining exports and increasing imports, and in 1959 the United States export surplus fell to about \$1,000,000,000 and the over-all balance of payments deficit rose to some \$3,700,000,000. In the past ten years the gold reserves of the United States went down from almost \$25,000,000,000 to about \$19,000,000,000, while the remainder of the world increased its holdings of gold and U.S. dollars by approximately \$22,000,000,000. Although most of this gain accrued to Western Europe there was some improvement in the distribution of world reserves during the past few years. Another development tending to strengthen international liquidity was the recent decision to greatly enlarge the resources of the International Monetary Fund and the World Bank for Reconstruction and Development.

As a corollary of the general improvement in the international balance of payments, significant steps have been taken in the past few years in the direction of freer multilateral trade and payments. Many quantitative controls have been eased and tariff concessions have continued to be made among the contracting parties to the General Agreement on Tariffs and Trade. At the end of 1958 the majority of Western European countries, including the Benelux countries, France, Germany, Italy, Norway, Sweden and the United Kingdom, established external convertibility of their currencies, and a few countries in other parts of the world had taken similar steps. Further progress was made in 1959 in the relaxation of trade restrictions; in particular, most Commonwealth countries, including the United Kingdom, liberalized their import controls affecting Canadian exports, pursuant to the decisions made at the Commonwealth Trade and Economic Conference in Montreal in 1958.

In view of the vital importance of free and multilateral trade to Canada's economy, the latest European developments in the field of commercial policy have been of great interest to this country. On Jan. 1, 1958, the European Economic Community (EEC), comprising the Benelux countries, France, Italy and Western Germany, came into being. The EEC is intended to become a customs union in which tariffs among the participating countries will be gradually abolished and a common external policy adopted toward the outside world, as a first step toward the ultimate integration of the respective economies into one single unit. The first reductions of tariffs and increases in quotas among the member countries of the EEC were implemented on Jan. 1, 1959, and some of the concessions were extended to Canada and other countries on a most-favoured-nation basis.

Following the breakdown of negotiations for a European free trade area, which was to comprise all members of the OEEC including the Common Market, a convention for the establishment of the European Free Trade Area (EFTA) was initialled on Nov. 20, 1959, by the governments of Austria, Denmark, Norway, Portugal, Sweden, Switzerland and the United Kingdom. The objective of the EFTA is to create a new European trading group which will eventually result in a free trade area for the participating countries each of whom will, however, retain its own external tariff structure. But unlike the EEC, the EFTA is not aiming at becoming a fully integrated single economic unit. In the case of both these regional groupings, the elimination of internal tariffs is restricted to industrial goods only, with special arrangements for agricultural products, which, in the case of the EEC, would apply internally as well as vis-à-vis the outside world.

From the Canadian point of view, the main question posed by the formation of these two regional groupings is how this new situation will affect Canada's agricultural and other exports to the various member countries. In particular, the common external EEC tariffs on a number of important Canadian exports, such as lumber, wood pulp, synthetic rubber and aluminum, are to be fixed through negotiation among the Common Market countries. Also, with regard to the EFTA, there is the problem of the effect of the gradual disappearance of the preferential tariffs which Canadian exports have traditionally enjoyed in the United Kingdom market.

PART II.—FOREIGN TRADE STATISTICS*

Section 1.—Explanations *re* Canadian Trade Statistics

Certain problems of procedure arise in recording trade statistics and require explanation. For the correct interpretation of the statistics of foreign trade, it is necessary that the following definitions and explanations of terms used be kept in mind:—

Quantities and Values.—In all tables of imports and exports the quantities and values are based upon the declarations of importers (import entries) and exporters (export entries), as subsequently checked by customs officials.

Imports: Valuation.—"Imports" means imports entered for consumption. "Entered for consumption" does not necessarily imply that the goods have been actually consumed in Canada but that they have passed into the possession of the importer and that duty has been paid on that portion liable for duty.

Under the main provisions of the law, the value of merchandise imported into Canada is the fair market value or price thereof when sold for home consumption in the principal markets of the country from which said merchandise was exported. (See Sects. 35 to 45 and 55 of the Customs Act.)

Canadian Exports: Valuation.—"Canadian produce" exported (domestic exports) includes Canadian products or manufactures, also exports of commodities of foreign origin that have been changed in form or enhanced in value by further manufacture in Canada, such as sugar refined in Canada from imported raw sugar, aluminum extracted from imported ore, and articles constructed or manufactured from imported materials. The value of exports of Canadian merchandise is the actual amount received in Canadian dollars exclusive of freight, insurance and other handling charges.

Foreign Exports: Valuation.—"Foreign produce" exported (re-exports) consists of foreign merchandise that has previously been imported (entered for home consumption) and is exported from Canada unchanged in form. The value of such commodities is the actual amount received in Canadian dollars exclusive of freight, insurance and other handling charges.

Countries to which Trade is Credited.—Imports are classified as received from the countries whence they were consigned to Canada. These countries are not necessarily the countries of actual origin of the goods, since goods produced in one country may be imported by a firm in another country and later re-sold to Canada. In such cases the second country would be the country of consignment to which the goods would be credited.

* Based on statistics taken from reports published by the External Trade Section, International Trade Division, Dominion Bureau of Statistics.

There is one exception to this rule. An attempt is made to classify by country of actual origin imports produced in Central and South America but consigned to Canada from the United States. The effect of this procedure, which has been in force since 1946, is to reduce slightly the imports credited to the United States and to increase those credited to Central and South American countries.

Exports are always credited to the country to which they are consigned.

Discrepancies in Trade Statistics between Canada and Other Countries.—Canada's statistics of exports are rarely in exact agreement with the import statistics of its customers and parallel differences occur with Canadian imports. Among the chief factors contributing to these discrepancies are:—

- (1) Differences in the system of valuation used by Canada and those of other countries, especially with respect to the treatment of transportation charges.
- (2) Differences in the statistical treatment of special categories of trade, such as armaments and military supplies, government-financed gift or mutual aid shipments, postal and express shipments, or warehouse trade.
- (3) Differing definitions of territorial areas.
- (4) Differing systems of geographical classification of trade, notably the consignment system used by Canada and the actual origin or ultimate destination system in use by some other countries.
- (5) Differences in the time at which trade is recorded in the statistics of partner countries caused by the time required for goods to move from one country to another.

Treatment of Gold in Trade Statistics.—The general use of gold as a money metal gives it peculiar attributes that distinguish it from other commodities in trade. In particular, international movements of gold are determined largely by monetary factors rather than by ordinary trade or commercial considerations. Gold is generally acceptable; it does not have to surmount tariff barriers and is normally assured a market at a fixed minimum price. Also, gold may be bought or sold internationally without any physical movements of the metal, such transactions being recognized by simply setting aside or 'ear-marking' the metal in the vaults of some central bank.

For these reasons movements of gold in a primary or semi-fabricated state are excluded from the statistics of Canada's commodity trade. However, since gold is produced in Canada primarily as an export commodity, a series showing new gold production available for export is published as a supplement to the trade statistics. Because this series is calculated on a production basis, a division of the figures into transactions with individual countries is not possible.

1.—New Gold Production Available for Export, by Month, 1951-58

NOTE.—Since Mar. 21, 1956, mines not receiving aid under the Emergency Gold Mining Assistance Act have been allowed to sell their gold to private residents and non-residents, either for export or for safe-keeping in Canada. Such sales, commencing in April 1956, are now included in the figures for new gold production available for export.

(Millions of dollars)

Month	1951	1952	1953	1954	1955	1956	1957	1958
January.....	17.3	13.3	16.0	11.5	11.5	12.5	13.9	14.8
February.....	11.7	13.0	16.1	10.2	14.7	12.7	12.5	18.1
March.....	8.4	15.0	15.6	12.8	12.2	12.4	12.1	11.5
April.....	16.2	11.2	11.7	13.8	10.9	12.5	10.8	10.9
May.....	13.0	8.5	12.0	13.7	15.0	14.0	15.4	13.3
June.....	13.8	14.6	13.7	15.6	13.3	12.9	5.2	15.0
July.....	13.4	14.9	9.3	13.6	11.9	11.1	12.7	13.5
August.....	11.0	9.6	10.7	13.3	13.1	14.5	3.9	11.9
September.....	10.8	12.8	10.4	11.9	12.2	12.2	10.2	12.9
October.....	8.2	10.1	9.9	12.3	11.7	12.3	16.3	14.3
November.....	7.7	13.6	9.1	12.3	15.0	12.3	16.4	11.6
December.....	18.3	13.5	9.8	13.7	13.4	10.4	17.1	12.5
Totals.....	149.8	150.1	144.3	154.7	154.9	149.8	146.5	160.3

Section 2.—Total Foreign Trade

In considering the figures in Sections 2 to 6, reference should be made to the explanatory notes on trade in Section 1. It must be emphasized that gold imports and exports are excluded from all tables.

2.—Value of Total Foreign Trade of Canada (excluding Gold), 1944-58

NOTE.—These figures are available on a calendar-year basis since 1919; figures for 1919-34 are given in the 1950 Year Book, p. 905, and for 1935-43 in the 1954 edition, p. 969. Figures for the years ended Mar. 31, 1868-1939 are given in the 1940 Year Book, p. 526.

Year	Imports			Exports			Balance of Trade: Excess of Exports (+) Imports (—)
	Dutiable	Free	Total	Domestic Produce	Foreign Produce	Total	
	£	\$	£	\$	£	\$	£
1944.....	884,751,584	874,146,613	1,758,898,197	3,439,953,165	43,145,447	3,483,098,612	+1,724,200,415
1945.....	798,795,201	786,979,941	1,585,775,142	3,218,330,353	49,093,935	3,267,424,288	+1,681,649,146
1946.....	1,078,943,972	848,335,430	1,927,279,402	2,312,215,301	26,950,546	2,339,165,847	+ 411,886,445
1947.....	1,562,690,081	1,011,254,044	2,573,944,125	2,774,902,355	36,888,055	2,811,790,410	+ 237,846,285
1948.....	1,382,202,722	1,254,742,630	2,636,945,352	3,075,438,085	34,590,583	3,110,028,668	+ 473,083,316
1949.....	1,444,123,667	1,317,083,574	2,761,207,241	2,992,960,978	29,491,856	3,022,452,834	+ 261,245,593
1950.....	1,617,948,425	1,556,304,713	3,174,253,138	3,118,386,551	38,686,122	3,157,072,673	+ 17,180,465
1951.....	2,174,304,400	1,910,552,078	4,084,856,478	3,914,460,376	48,923,939	3,963,384,315	+ 121,472,163
1952.....	2,162,882,381	1,867,585,272	4,030,467,653	4,301,080,679	54,878,985	4,355,959,664	+ 325,492,011
1953.....	2,417,960,243	1,964,870,187	4,382,830,430	4,117,405,882	55,195,233	4,172,601,115	+ 210,229,315
1954.....	2,311,344,114	1,781,852,224	4,093,196,338	3,881,271,854	65,644,868	3,946,916,722	+ 146,279,616
1955.....	2,637,434,788	2,074,935,247	4,712,370,035	4,281,784,253	69,499,483	4,351,283,736	+ 361,086,299
1956.....	3,292,516,113	2,412,932,790	5,705,448,903	4,789,745,693	73,397,431	4,863,143,124	+ 842,305,779
1957.....	3,223,197,032	2,400,213,427	5,623,410,459	4,824,232,926	95,285,831	4,919,518,757	+ 703,891,702
1958.....	2,952,713,748	2,239,637,242	5,192,350,990	4,823,347,122	102,941,778	4,926,288,900	+ 266,062,090

Section 3.—Trade by Geographic Areas

The tables in this Section provide information about Canada's total foreign trade by continent and by country.

3.—Trade of Canada, by Continent, 1955-58

Item and Continent	1955		1956		1957		1958	
	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total
	\$'000		\$'000		\$'000		\$'000	
Imports								
Europe—								
United Kingdom.....	400,531	8.5	484,679	8.5	521,958	9.3	528,650	10.1
Other Europe.....	204,741	4.3	297,116	5.2	314,090	5.6	325,130	6.2
North America—								
United States.....	3,452,178	73.3	4,161,667	72.9	3,998,549	71.1	3,572,379	68.8
Other North America.....	140,316	3.0	166,767	2.9	167,528	3.0	170,894	3.3
South America.....	273,657	5.8	305,693	5.4	341,348	6.0	291,493	5.6
Asia.....	162,419	3.4	204,498	3.6	190,153	3.4	222,031	4.3
Oceania.....	46,933	1.0	49,414	0.9	51,738	0.9	55,161	1.1
Africa.....	31,595	0.7	35,615	0.6	38,046	0.7	28,611	0.6
Totals, Imports.....	4,712,370	100.0	5,705,449	100.0	5,623,410	100.0	5,192,351	100.0

3.—Trade of Canada, by Continent, 1955-58—concluded

Item and Continent	1955		1956		1957		1958	
	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total
Exports (Domestic)	\$'000		\$'000		\$'000		\$'000	
Europe—								
United Kingdom.....	769,313	18.0	812,706	17.0	722,669 ^a	15.0 ^a	773,804	16.0
Other Europe.....	393,105	9.2	542,342	11.3	560,813	11.6	580,382	12.0
North America—								
United States.....	2,559,343	59.8	2,818,655	58.8	2,867,608	59.4 ^a	2,827,417	58.6
Other North America.....	124,179	2.9	141,503	3.0	172,897	3.6	133,075	2.8
South America.....	94,320	2.2	101,107	2.1	122,539	2.5	111,047	2.3
Asia.....	178,018	4.1	216,223	4.5	239,235	5.0 ^a	260,215	5.4
Oceania.....	86,701	2.0	71,534	1.5	70,885	1.5	71,490	1.5
Africa.....	76,805	1.8	85,676	1.8	67,587	1.4	65,916	1.4
Totals, Exports (Domestic)...	4,281,784	100.0	4,789,746	100.0	4,824,232^a	100.0	4,823,347	100.0

4.—Trade of Canada with Commonwealth and Foreign Countries, Selected Years 1886-1958

Item and Year	Canadian Trade with—							
	United Kingdom		United States		Other Commonwealth Countries		Other Foreign Countries	
	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total
Imports	\$'000		\$'000		\$'000		\$'000	
Ended Mar. 31—								
1886.....	39,033	40.7	42,819	44.6	2,384	2.5	11,757	12.2
1891.....	42,019	37.7	52,033	48.7	2,318	2.1	15,163	13.5
1896.....	32,825	31.2	53,529	50.8	2,389	2.2	16,619	15.8
1901.....	42,820	24.1	107,373	60.3	3,833	2.2	23,900	13.4
1906.....	69,184	24.4	169,256	59.6	14,606	5.1	30,694	10.9
1911.....	109,935	24.3	275,824	60.8	19,533	4.4	47,433	10.5
1916.....	77,404	15.2	370,881	73.0	27,826	5.5	32,091	6.3
1921.....	213,974	17.3	856,177	69.0	52,029	4.2	117,979	9.5
Ended Dec. 31—								
1926.....	164,707	16.3	668,747	66.3	49,907	5.0	124,980	12.4
1929.....	194,778	15.0	893,585	68.8	62,287	4.8	148,343	11.4
1937.....	147,292	18.2	490,606	60.7	89,304	11.0	81,796	10.1
1939.....	114,007	15.2	496,898	66.1	74,893	10.0	65,257	8.7
1943.....	134,965	7.7	1,423,672	82.1	103,666	6.0	72,773	4.2
1947.....	189,370	7.4	1,974,679	76.7	165,024	6.5	244,871	9.5
1948.....	299,502	11.3	1,805,763	68.5	204,612	7.8	327,069	12.4
1949.....	307,450	11.1	1,951,860	70.7	186,779	6.8	315,118	11.4
1950.....	404,213	12.7	2,130,476	67.1	241,411	7.6	398,153	12.6
1951.....	420,985	10.3	2,812,927	68.9	306,104	7.5	544,840	13.3
1952.....	359,757	8.9	2,976,962	73.9	184,704	4.6	509,044	12.6
1953.....	453,391	10.3	3,221,214	73.5	170,671	3.9	537,654	12.3
1954.....	392,472	9.6	2,961,380	72.4	181,760	4.4	557,584	13.6
1955.....	400,531	8.5	3,452,178	73.3	209,772	4.4	649,889	13.8
1956.....	484,679	8.5	4,161,667	72.9	221,232	3.9	837,872	14.7
1957.....	521,958	9.3	3,998,549	71.1	238,861	4.2	864,042	15.4
1958.....	526,650	10.1	3,572,379	68.8	209,862	4.1	883,460	17.0
Exports (Domestic)								
Ended Mar. 31—								
1886.....	36,694	47.2	34,284	44.1	3,263	4.2	3,515	4.5
1891.....	43,244	48.8	37,743	42.6	3,893	4.4	3,791	4.2
1896.....	62,718	57.2	37,789	34.4	4,048	3.7	5,152	4.7
1901.....	92,858	52.3	67,984	38.3	7,891	4.5	8,700	4.9
1906.....	127,456	54.2	83,546	35.5	10,965	4.6	13,516	5.7
1911.....	132,157	48.2	104,116	38.0	16,811	6.1	21,233	7.7
1916.....	451,852	60.9	201,106	27.1	30,677	4.2	67,974	7.8
1921.....	312,845	26.3	542,323	45.6	90,607	7.6	243,389	20.5

4.—Trade of Canada with Commonwealth and Foreign Countries, Selected Years 1886-1958—concluded

Item and Year	Canadian Trade with—							
	United Kingdom		United States		Other Commonwealth Countries		Other Foreign Countries	
	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total	Value	P.C. of Total
Exports (Domestic)—concluded	\$'000		\$'000		\$'000		\$'000	
Ended Dec. 31—								
1926.....	459,223	36.4	457,878	36.3	95,701	7.6	248,439	19.7
1929.....	290,295	25.2	492,688	42.8	105,006	9.1	284,430	22.9
1937.....	402,062	40.3	360,012	36.1	104,159	10.4	131,134	13.2
1939.....	328,099	35.5	380,392	41.1	102,707	11.1	113,738	12.3
1943.....	1,032,647	34.8	1,149,232	38.7	369,015	12.4	420,581	14.1
1947.....	751,198	27.1	1,034,226	37.3	417,303	15.0	572,175	20.6
1948.....	685,914	22.3	1,500,987	48.8	345,477	11.3	542,060	17.6
1949.....	704,956	23.5	1,503,459	50.2	310,067	10.4	474,480	15.9
1950.....	469,910	15.1	2,020,988	64.8	185,179	5.9	422,310	14.2
1951.....	631,461	16.1	2,267,675	58.7	240,946	6.2	744,379	19.0
1952.....	745,845	17.3	2,306,955	58.7	261,687	6.1	986,593	22.9
1953.....	665,232	16.2	2,418,915	58.7	232,352	5.6	800,906	19.5
1954.....	655,408	16.9	2,317,153	59.7	195,053	5.0	715,658	18.4
1955.....	769,313	18.0	2,550,343	59.8	237,125	5.5	716,004	16.7
1956.....	812,706	17.0	2,818,655	58.8	243,216	6.1	915,169	19.1
1957.....	722,669 ^a	15.0 ^a	2,867,608	59.4 ^a	233,115 ^a	4.8	1,000,839	20.8 ^a
1958.....	773,804	16.0	2,827,417	58.6	282,771	5.9	939,355	19.5

5.—Trade of Canada, by Leading Countries, 1956-58

Rank in—			Item and Country	1956	1957	1958
1956	1957	1958				
Imports				\$'000	\$'000	\$'000
1	1	1	United States.....	4,161,667	3,998,549	3,572,379
2	2	2	United Kingdom.....	484,679	521,958	526,650
3	3	3	Venezuela.....	208,401	248,145	209,590
4	4	4	Germany, Federal Republic of.....	89,348	97,646	105,944
5	5	5	Japan.....	60,826	61,605	70,216
15	11	6	Arabia.....	24,712	34,316	68,023
10	9	7	France.....	32,600	36,183	41,091
8	8	8	Netherlands Antilles.....	38,119	39,269	39,804
6	6	9	Belgium and Luxembourg.....	52,728	44,066	36,022
13	14	10	Australia.....	26,310	28,728	32,920
14	12	11	Italy.....	24,967	33,012	32,820
7	18	12	Mexico.....	41,699	21,113	32,059
17	16	13	Netherlands.....	23,776	25,396	29,541
11	13	14	India.....	30,898	29,248	27,696
16	7	15	Jamaica.....	24,633	40,210	27,628
9	10	16	Brazil.....	34,832	35,325	27,497
19	17	17	Switzerland.....	22,301	24,660	26,968
20	19	18	British Guiana.....	20,498	21,003	20,644
12	15	19	Malaya and Singapore.....	28,558	27,356	19,904
25	23	20	Cuba.....	12,279	13,866	18,881
18	20	21	Colombia.....	23,056	18,190	16,585
22	21	22	Sweden.....	17,303	15,568	14,141
23	22	23	Ceylon.....	16,564	14,916	12,869
24	24	24	New Zealand.....	12,321	11,770	11,593
26	28	25	Trinidad and Tobago.....	11,051	8,205	9,851
36	30	26	Hong Kong.....	5,699	7,223	8,823
33	26	27	Denmark.....	6,182	8,616	7,780
45	27	28	Costa Rica.....	3,893	8,606	7,127
28	25	29	Mauritius and Seychelles.....	7,785	10,278	5,918
38	29	30	Barbados.....	4,634	7,628	3,751
Totals, 30 Leading Countries.....				5,552,319	5,492,654	5,064,715
Grand Totals, Imports.....				5,705,449	5,623,410	5,192,351

5.—Trade of Canada, by Leading Countries, 1956-58—concluded

Rank in—			Item and Country	1956	1957	1958
1956	1957	1958				
			Exports (Domestic)	\$'000	\$'000	\$'000
1	1	1	United States.....	2,818,655	2,867,608	2,827,417
2	2	2	United Kingdom.....	812,706	722,669 ¹	773,804
3	3	3	Germany, Federal Republic of.....	134,098	151,939	201,863
4	4	4	Japan.....	127,870	139,152	104,926
15	15	5	India.....	25,714	28,991	79,110
8	5	6	Netherlands.....	54,559	69,849	74,924
6	7	7	Belgium and Luxembourg.....	57,852	60,402	69,702
7	9	8	Norway.....	54,559	55,548	55,985
10	10	9	Australia.....	47,747	48,883	52,755
5	11	10	Union of South Africa.....	64,616	48,441	50,035
9	8	11	France.....	53,156	57,506	45,173
13	13	12	Venezuela.....	34,335	39,844	43,655
11	12	13	Mexico.....	39,385	42,613	31,564
12	6	14	Italy.....	37,744	62,842	29,915
14	17	15	Switzerland.....	33,535	25,045	29,499
24	16	16	Brazil.....	13,028	25,798	21,169
16	29	17	Union of Soviet Socialist Republics.....	24,606	10,658	18,868
23	21	18	Cuba.....	15,371	16,889	17,595
22	18	19	Jamaica.....	17,222	19,487	15,741
27	28	20	Pakistan.....	10,502	11,395	15,384
19	20	21	New Zealand.....	17,995	16,964	15,103
18	19	22	Philippines.....	18,060	17,540	14,088
21	23	23	Colombia.....	17,589	14,627	13,886
28	25	24	Puerto Rico.....	10,421	12,610	12,570
25	27	25	Trinidad and Tobago.....	12,491	11,811	11,599
26	30	26	Peru.....	11,337	10,108	11,501
30	26	27	Sweden.....	7,894	12,111	11,008
33	24	28	Argentina.....	6,183	14,199	6,506
31	14	29	Panama.....	7,748	30,665	5,393
20	22	30	Poland.....	17,618	16,669	645
Totals, 30 Leading Countries.....				4,604,894	4,662,863¹	4,661,362
Grand Totals, Exports (Domestic).....				4,789,746	4,824,233¹	4,823,347

6.—Value of Imports by Country 1952-58, with Averages 1935-39

Country	Averages 1935-39	1952	1953	1954	1955	1956	1957	1958
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
North America.....	421,356	2,979,344	3,224,247	2,963,996	3,456,175	4,165,506	4,003,315	3,576,547
Alaska.....	93	2,333	2,961	7,573	3,932	3,792	4,619	4,086
Greenland.....	311	1	6	13	13	10	55	8
St. Pierre and Miquelon.....	26	48	66	30	52	38	91	73
United States.....	418,738	2,976,962	3,221,214	2,961,380	3,452,178	4,161,667	3,998,549	3,572,379
Central America and Antilles....	14,570	112,431	89,910	103,784	136,319	162,928	162,762	166,729
Bahamas.....	1 ¹	406	427	418	272	221	167	204
Bermuda.....	102	317	128	390	258	273	247	463
British Honduras.....	87	26	139	124	104	171	210	145
West Indies Federation.....	12,624	27,746	23,408	31,512	36,099	42,511	58,430	42,994
Barbados.....	3,221	8,666	8,376	6,858	8,236	4,634	7,628	5,761
Jamaica.....	5,160	9,204	11,761	16,809	16,567	24,633	40,210	27,628
Leeward and Windward Islands	1,816	216	1,210	1,250	2,456	2,193	2,387	1,764
Trinidad and Tobago.....	2,387	9,660	8,062	9,695	8,440	11,061	8,206	9,861
America Virgin Islands.....	2	—	—	2	2	—	5	44
Costa Rica.....	77	8,740	9,472	7,746	5,948	3,893	8,606	7,127
Cuba.....	815	18,615	11,654	9,913	10,025	12,279	13,866	18,881
Dominican Republic.....	4	6,000	5,854	1,663	1,529	1,346	1,274	2,660

¹ Included with Leeward and Windward Islands.² Less than \$500.

6.—Value of Imports by Country 1952-58, with Averages 1935-39—continued

Country	Averages 1935-39	1952	1953	1954	1955	1956	1957	1958
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Central America and Antilles								
—concluded								
El Salvador.....	19	771	1,389	951	2,962	1,133	1,312	1,186
French West Indies.....	1	2	—	1	158	1	—	1
Guatemala.....	67	2,082	3,259	5,060	4,545	3,227	3,470	3,588
Haiti.....	63	1,928	748	1,570	1,597	1,683	1,494	1,080
Honduras.....	49	4,643	4,594	2,589	1,666	7,079	4,575	4,903
Mexico.....	667	23,937	15,785	14,033	28,814	41,699	21,113	32,059
Netherlands Antilles.....	150	11,747	8,154	20,582	30,722	38,119	39,269	39,804
Nicaragua.....	1	501	391	181	1,429	655	555	2,660
Panama.....	32	4,125	3,637	5,850	9,037	7,585	7,198	7,489
Puerto Rico.....	13	846	872	1,203	1,094	1,054	972	1,443
South America	22,930	237,073	252,332	258,127	273,657	305,693	341,348	291,493
British Guiana.....	5,846	23,660	17,900	20,482	18,307	20,498	21,003	20,644
Falkland Islands.....	1	—	—	1	—	—	1	2
Argentina.....	5,374	4,374	8,529	2,738	4,414	4,626	4,703	5,437
Bolivia.....	26	3,351	1,415	267	19	88	148	134
Brazil.....	920	35,103	35,047	31,622	30,747	34,832	35,325	27,497
Chile.....	125	3,282	1,052	236	250	1,704	1,622	825
Colombia.....	5,139	18,004	23,215	24,820	22,220	23,056	18,190	16,585
Ecuador.....	41	2,751	2,688	3,763	5,187	4,498	4,428	4,967
French Guiana.....	1	—	3	—	1	—	—	1
Paraguay.....	62	346	260	520	237	142	278	347
Peru.....	3,554	8,050	2,928	2,264	869	2,766	2,799	2,355
Surinam.....	1	528	1,345	2,793	3,646	3,925	3,899	2,270
Uruguay.....	180	1,863	2,903	1,025	483	1,157	809	841
Venezuela.....	1,662	135,758	155,147	167,594	187,277	208,401	248,145	209,590
Northwestern Europe	157,485	485,675	600,417	544,666	572,358	737,036	782,936	797,539
United Kingdom.....	124,047	359,757	453,391	392,472	400,531	484,679	521,958	526,650
Austria.....	245	2,917	2,967	3,043	2,709	3,913	4,431	4,791
Belgium and Luxembourg.....	6,330	33,216	29,082	25,077	29,051	52,728	44,066	36,022
Denmark.....	165	2,167	2,175	3,463	4,269	6,182	8,616	7,780
France.....	6,382	19,117	22,267	22,046	25,016	32,600	36,183	41,091
Germany, Federal Republic of.....	10,364 ²	22,629	35,507	44,485	55,603	89,348	97,646	105,944
Iceland.....	3	50	80	59	8	9	47	13
Ireland.....	69	462	582	1,150	336	415	1,219	1,368
Netherlands.....	3,984	16,495	22,298	22,562	20,951	23,776	25,396	29,541
Norway.....	742	3,857	2,289	1,983	2,366	3,780	3,145	3,229
Sweden.....	2,044	8,611	9,341	9,175	12,152	17,308	15,568	14,141
Switzerland.....	3,110	16,396	20,437	19,151	19,365	22,301	24,660	26,968
Southern Europe	3,863	18,326	21,320	22,861	27,204	33,459	41,971	43,169
Gibraltar.....	—	—	—	1	1	1	7	11
Malta.....	2	51	67	67	62	53	87	88
Greece.....	47	197	224	231	280	274	456	380
Italy.....	2,403	11,735	14,271	15,006	18,502	24,967	33,012	32,820
Portugal.....	265	1,798	1,962	1,798	1,941	2,272	2,664	2,967
Azores and Madeira.....	157	285	179	193	200	164	149	153
Spain.....	989	4,260	4,619	5,566	6,220	5,727	5,596	6,749
Eastern Europe	2,943	7,553	5,476	4,727	5,709	11,300	11,140	11,073
Bulgaria.....	4	2	—	1	3	4	1	4
Czechoslovakia.....	1,979	3,559	2,589	1,796	2,880	5,675	5,045	4,950
Estonia.....	23	31	9	5	2	1	2	1
Finland.....	70	234	548	609	384	527	482	564
Germany, Eastern.....	8	492	959	721	572	779	707	948
Hungary.....	130	279	184	210	124	209	408	810
Latvia.....	11	36	7	5	5	2	2	1
Lithuania.....	4	16	3	2	—	1	1	1
Poland.....	185	556	244	405	595	2,185	1,110	1,276
Romania.....	96	13	7	3	1	3	1	4
Union of Soviet Socialist Republics.....	341	2,234	824	687	628	1,007	2,804	1,688
Yugoslavia.....	99	101	101	284	516	907	578	827
Middle East	1,612	29,338	30,650	23,697	31,770	50,342	38,504	73,567
Aden.....	4	7	10	79	48	73	51	63

¹ Less than \$500.² Includes all Germany.³ Included with Germany, Federal Republic of.

6.—Value of Imports by Country 1952-58, with Averages 1935-39—concluded

Country	Averages 1935-39	1952	1953	1954	1955	1956	1957	1958
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Middle East—concluded								
Arabia.....	2	7,559	2,196	2,225	6,986	24,712	34,317	68,023
Egypt.....	728	462	4,203	440	294	166	330	271
Ethiopia.....	5	21	44	97	90	125	63	20
Iran.....	126	1,168	1,025	1,385	2,064	1,057	546	920
Iraq.....	357	924	1,371	238	1,299	941	435	1,559
Israel.....	68	1,161	1,812	1,040	1,166	1,511	1,587	1,813
Italian Africa.....	1	—	—	—	—	—	—	1
Jordan.....	—	—	—	—	2	1	4	6
Libya.....	—	—	—	1	3	1	1	2
Lebanon.....	6	15,171	19,584	17,413	17,920	19,601	43	81
Syria.....	6	72	56	23	1,059	1,351	242	200
Sudan.....	25	76	60	57	97	97	45	80
Turkey.....	293	2,719	791	699	743	706	841	529
Other Asia.....	34,355	92,019	87,734	91,766	131,133	154,544	152,088	148,837
Ceylon.....	4,015	12,492	14,461	12,527	15,581	16,564	14,916	12,869
India.....	8,315	26,822	26,627	28,054	35,147	30,898	29,248	27,696
Pakistan.....	842	191	558	566	816	1,306	504	477
Hong Kong.....	11,154	3,711	4,427	4,154	5,875	5,699	7,223	8,823
Malaya and Singapore.....	11,154	25,473	21,896	19,586	28,510	28,558	27,356	19,904
Other British East Indies.....	79	1,772	350	172	71	122	120	133
Afghanistan.....	1	19	42	9	6	—	—	—
Burma.....	381	4	2	79	7	—	—	88
China.....	3,344	1,286	1,119	1,621	3,125	5,721	5,304	5,376
Taiwan.....	126	—	75	187	155	112	193	189
Indo-China.....	800	—	1	45	172	16	7	5
Indonesia.....	4,649	893	598	611	1,001	1,143	965	231
Japan.....	800	13,162	13,629	19,197	36,718	60,826	61,605	70,216
Korea.....	1	8	54	170	480	8	35	24
Philippines.....	563	5,423	2,986	4,001	2,027	2,467	3,976	2,187
Portuguese Asia.....	1	—	14	1	—	—	—	1
Thailand.....	84	764	896	786	1,142	1,103	630	649
Other Africa.....	8,455	25,595	28,518	31,495	31,112	35,227	37,608	28,237
British East Africa.....	2,683	9,593	9,393	15,852	13,158	7,289	4,989	5,139
Mauritius and Seychelles.....	—	—	—	—	—	7,758	10,278	5,918
Federation of Rhodesia and Nyasaland.....	316	1,474	3,864	1,161	482	720	1,095	1,344
Union of South Africa.....	4,210	4,165	4,616	5,911	6,255	8,401	6,859	8,030
Other British South Africa.....	701	—	8	3	1	8	2	6
Ghana.....	370	5,523	3,159	1,986	3,775	4,063	5,989	2,129
Nigeria.....	7	1,764	1,584	866	858	986	2,355	2,374
Sierra Leone.....	1	6	2	7	8	18	9	2
Other British West Africa.....	—	—	1	1	—	—	1	2
Belgian Congo.....	5	990	2,247	1,489	2,673	2,744	3,338	1,126
Canary Islands.....	10	22	30	26	25	24	20	7
French Africa.....	61	404	2,631	3,184	3,267	2,075	2,275	1,757
Liberia.....	14	29	372	135	214	441	7	147
Madagascar.....	31	1	8	304	14	38	23	30
Morocco.....	32	1,049	529	197	195	196	292	187
Portuguese East Africa.....	15	576	73	191	128	370	41	24
Portuguese West Africa.....	—	—	2	181	44	94	33	12
Spanish Africa.....	—	—	—	—	16	1	2	—
Oceania.....	17,015	43,114	42,226	43,079	46,933	49,414	51,737	55,161
Australia.....	9,728	18,712	23,464	24,657	26,295	26,310	28,728	32,920
Fiji.....	2,341	6,487	5,554	5,813	5,016	6,267	7,218	5,728
New Zealand.....	4,754	14,231	8,572	7,814	12,316	12,321	11,770	11,593
Other British Oceania.....	3	—	—	—	—	142	—	160
French Oceania.....	3	1	—	3	—	1	19	1
Hawaii.....	186	3,473	4,635	5,292	3,305	4,374	4,003	4,760
United States Oceania.....	1	210	—	—	—	1	—	—
Totals, Imports.....	684,582	4,030,468	4,382,830	4,093,196	4,712,370	5,705,449	5,623,410	5,192,351
Totals, Commonwealth Countries.....	194,442	544,462	623,962	574,231	610,302	705,911	760,819	736,512
Totals, United States and Dependencies.....	419,030	2,983,824	3,229,682	2,975,447	3,460,510	4,170,886	4,008,149	3,582,712

¹ Less than \$500.² Not listed separately.³ Southern Rhodesia only.

7.—Value of Domestic Exports by Country 1952-58, with Averages 1935-39

Country	Averages 1935-39	1952	1953	1954	1955	1956	1957	1958
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
North America	329,805	2,309,787	2,421,558	2,319,950	2,562,031	2,823,358	2,872,219	2,830,229
Alaska.....	154	1,249	1,130	1,272	1,221	3,128	2,809	1,224
Greenland.....	—	303	194	299	86	176	76	138
St. Pierre and Miquelon.....	309	1,279	1,319	1,226	1,382	1,399	1,726	1,450
United States.....	321,294	2,306,955	2,418,915	2,317,153	2,559,343	2,818,655	2,867,608	2,827,417
Central America and Antilles	17,699	137,688	108,984	111,477	121,491	136,800	168,285	130,264
Bahamas.....	1	2,353	2,298	2,271	2,133	2,803	2,589	2,622
Bermuda.....	1,381	3,158	3,070	2,992	3,010	2,900	3,006	3,346
British Honduras.....	255	381	376	299	304	248	284	232
West Indies Federation.....	10,077	29,813	29,578	31,286	33,948	38,715	40,276	35,812
Barbados.....	1,218	8,912	8,734	4,378	4,267	4,721	4,665	4,198
Jamaica.....	3,887	10,691	12,490	11,562	12,907	17,222	19,487	15,741
Leeward and Windward Islands.....	1,600	4,276	5,864	3,931	4,149	4,281	4,513	4,274
Trinidad and Tobago.....	3,372	11,034	9,490	11,426	12,635	12,491	11,811	11,599
American Virgin Islands.....	42	167	178	119	190	130	126	136
Costa Rica.....	103	2,612	2,199	2,834	3,576	2,743	2,369	2,894
Cuba.....	1,418	24,181	16,124	17,455	13,910	15,371	16,889	17,595
Dominican Republic.....	171	4,643	3,993	4,269	4,168	4,985	5,024	5,368
El Salvador.....	69	2,230	1,901	1,526	1,808	2,295	2,415	2,151
French West Indies.....	157	47	26	24	23	17	39	35
Guatemala.....	117	1,896	2,234	2,021	2,508	3,003	3,207	3,661
Haiti.....	131	3,417	2,670	3,307	2,446	2,917	2,241	2,197
Honduras.....	159	1,736	556	471	588	868	1,061	1,213
Mexico.....	2,630	39,641	28,986	27,359	37,126	39,285	42,613	31,564
Netherlands Antilles.....	176	1,541	1,308	1,775	1,444	1,349	1,330	1,596
Nicaragua.....	72	1,185	1,354	1,653	1,769	1,402	1,542	1,890
Panama.....	316	11,359	4,380	4,057	2,824	7,748	30,665	5,393
Puerto Rico.....	425	7,328	7,753	7,757	9,715	10,421	12,610	12,570
South America	15,016	186,984	139,393	126,709	94,320	101,107	122,540	111,047
British Guiana.....	1,344	6,356	4,777	4,080	2,667	4,351	5,069	4,066
Falkland Islands.....	2	31	41	4	274	11	3	53
Argentina.....	4,696	8,227	7,641	6,692	6,833	6,183	14,199	6,506
Bolivia.....	113	6,398	5,501	1,272	1,086	1,489	949	439
Brazil.....	4,012	81,367	37,561	45,096	11,520	13,026	25,798	21,169
Chile.....	848	10,090	3,945	3,130	3,820	4,420	4,361	4,602
Colombia.....	1,296	13,756	20,146	21,000	22,691	17,589	14,627	13,865
Ecuador.....	93	2,030	4,220	5,509	4,953	4,344	2,786	3,209
French Guiana.....	36	3	6	4	2	2	5	2
Paraguay.....	8	112	339	167	91	238	172	184
Peru.....	1,072	16,405	15,108	5,086	6,001	11,337	10,108	11,501
Surinam.....	49	1,097	712	911	971	1,025	829	856
Uruguay.....	310	5,429	2,912	2,784	2,355	2,758	3,789	939
Venezuela.....	1,139	35,683	36,485	30,973	30,756	34,335	39,844	43,655
Northwestern Europe	412,354	1,151,964	991,813	958,303	1,106,502	1,230,650	1,173,983	1,283,528
United Kingdom.....	353,741	745,845	665,232	653,408	769,313	812,706	722,669	773,804
Austria.....	27	5,216	5,136	2,857	6,025	5,214	6,712	7,536
Belgium and Luxembourg.....	13,204	104,376	69,510	54,987	53,384	57,852	60,402	69,702
Denmark.....	1,438	9,881	6,303	2,929	3,172	3,516	3,532	5,001
France.....	8,566	48,264	32,281	33,799	42,563	53,156	57,506	45,173
Germany, Federal Republic of.....	9,639 ¹	94,863	83,858	86,899	90,751	134,098	151,939	201,863
Iceland.....	28	833	2,058	669	505	292	271	315
Ireland.....	3,861	23,058	13,356	8,821	12,808	10,144	8,399	8,719
Netherlands.....	10,062	41,508	42,382	39,777	47,689	54,559	69,849	74,924
Norway.....	7,247	39,002	37,278	43,813	47,031	57,682	55,548	55,985
Sweden.....	3,593	12,198	4,587	3,518	7,622	7,894	12,111	11,008
Switzerland.....	948	26,918	29,833	26,826	25,640	33,535	25,045	29,499
Southern Europe	4,986	68,352	56,925	35,136	43,245	51,552	78,724	45,606
Gibraltar.....	9	353	486	252	286	240	272	214
Malta.....	377	3,111	3,307	3,043	3,934	4,064	2,755	1,510

¹ Included with Leeward and Windward Islands.² Less than \$500.³ Includes all Germany.

7.—Value of Domestic Exports by Country 1952-58, with Averages 1935-39—continued

Country	Averages 1935-39	1952	1953	1954	1955	1956	1957	1958
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Southern Europe—concluded								
Greece.....	1,142	4,415	1,560	2,505	4,298	2,523	4,121	4,657
Italy.....	2,785	52,645	33,170	23,844	27,653	37,744	62,842	29,915
Portugal.....	170	4,026	3,991	2,118	2,554	1,696	2,605	2,280
Azores and Madeira.....	8	224	231	641	311	231	214	314
Spain.....	495	3,579	14,179	2,734	4,210	5,053	5,915	6,716
Eastern Europe								
Albania.....	3,091	25,873	3,779	13,420	12,671	72,846	30,775	25,053
Bulgaria.....	3	1	—	—	—	—	1	—
Czechoslovakia.....	10	2	3	8	2	105	119	71
Estonia.....	881	367	123	295	1,062	24,558	1,422	1,365
Finland.....	5	—	—	—	—	—	1	4
Germany, Eastern.....	539	2,694	1,888	476	1,736	1,952	940	2,334
Hungary.....	2	—	—	—	2,261	1,458	25	1
Latvia.....	4	81	48	35	165	1,913	292	387
Lithuania.....	242	—	—	1	1	—	1	1
Poland.....	196	—	—	—	—	—	1	1
Romania.....	805	69	183	558	4,005	17,918	16,669	645
Union of Soviet Socialist Republics.....	52	45	94	74	397	124	429	1,172
Yugoslavia.....	336	1	—	4,854	2,680	24,606	10,658	18,868
	18	22,613	1,940	7,119	363	213	220	207
Middle East								
Aden.....	1,511	50,326	33,218	24,500	12,108	11,987	13,797	15,619
Arabia.....	109	127	34	22	16	9	2	3
Egypt.....	3	2,149	2,644	1,594	1,244	1,942	1,664	2,020
Ethiopia.....	399	19,363	11,688	1,201	1,291	2,539	1,221	1,207
Iran.....	1	54	55	118	73	121	140	109
Iraq.....	118	585	753	757	644	790	1,717	1,657
Israel.....	55	313	458	425	1,170	657	1,070	970
Italian Africa.....	251	11,940	9,059	10,174	4,558	2,725	5,050	4,641
Jordan.....	2	6	—	1	1	6	6	—
Libya.....	3	105	38	123	49	97	98	159
Lebanon.....	1	854	1,279	840	74	101	203	180
Syria.....	80	9,355	5,161	982	1,293	1,320	1,116	2,242
Sudan.....	105	580	578	1,169	1,045	719	812	767
Turkey.....	388	104	17	8	4	74	213	186
		4,791	1,455	7,086	647	887	483	1,479
Other Asia								
Ceylon.....	36,001	224,196	238,024	163,438	167,352	207,078	227,223	246,277
India.....	240	5,825	3,307	3,147	2,671	3,341	3,213	5,508
Pakistan.....	3,732	55,423	37,187	17,689	24,669	25,714	28,991	79,110
Hong Kong.....	1,651	16,016	32,103	8,970	6,202	10,502	11,395	15,384
Malaya and Singapore.....	2,173	9,582	9,000	8,252	7,253	7,026	7,595	6,054
Other British East Indies.....	5	7,067	2,854	2,983	3,421	3,914	3,316	3,233
Afghanistan.....	1	13	27	18	53	127	187	113
Burma.....	71	272	150	55	20	14	88	24
China.....	3,808	1,023	444	212	480	288	244	957
Taiwan.....	85	1,156	—	70	1,016	2,427	1,392	7,809
Indo-China.....	80	—	1,482	3,186	1,227	751	1,648	1,167
Indonesia.....	801	327	351	190	337	546	1,020	266
Japan.....	21,880	6,250	1,990	1,321	944	1,243	1,633	1,695
Korea.....	3	102,603	118,568	96,474	90,893	127,870	139,152	104,926
Philippines.....	3	335	3,197	3,197	7,514	2,864	7,302	4,308
Portuguese Asia.....	1,523	16,045	13,872	15,863	18,136	18,060	17,540	14,088
Thailand.....	1	282	190	43	174	454	461	341
	22	1,976	1,509	1,767	2,341	1,936	2,046	1,294
Other Africa								
British East Africa.....	20,648	69,878	69,996	63,126	75,362	82,834	65,803	64,234
Mauritius and Seychelles.....	789	1,031	348	375	602	415	788	541
Federation of Rhodesia and Nyasaland.....	970	—	—	—	—	108	146	108
Union of South Africa.....	15,457	2,662	2,220	3,945	4,323	4,679	4,956	3,915
Other British South Africa.....	35	47,852	50,763	39,883	56,026	64,616	48,441	50,035
Gambia.....	270	12	15	7	5	6	1	4
Ghana.....	270	9	29	38	77	60	13	14
		254	1,749	2,313	1,461	1,481	1,254	1,283

¹ Less than \$500.² Included with Germany, Federal Republic of.³ Not listed separately.⁴ Southern Rhodesia only.

7.—Value of Domestic Exports by Country 1952-58, with Averages 1935-39—concluded

Country	Averages 1935-39	1952	1953	1954	1955	1956	1957	1958
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Other Africa—concluded								
Nigeria.....	145	865	942	1,452	890	750	1,510	337
Sierra Leone.....	203	159	235	356	598	614	493	502
Other British West Africa.....	1	—	1	33	33	40	24	2
Belgian Congo.....	89	5,900	3,349	3,628	3,534	2,786	2,623	2,931
Canary Islands.....	17	825	23	1	—	3	—	1
French Africa.....	248	3,226	1,248	1,204	1,176	1,037	864	1,032
Liberia.....	17	203	3,145	4,071	2,456	1,781	1,553	663
Madagascar.....	13	97	64	41	71	47	31	23
Morocco.....	711	4,630	3,809	2,824	1,791	2,028	733	1,165
Portuguese East Africa.....	1,675	2,088	1,997	2,614	2,044	2,197	2,139	1,165
Portuguese West Africa.....				323	274	173	219	344
Spanish Africa.....	9	64	59	17	2	11	15	2
Oceania.....	43,424	76,033	53,716	65,212	86,701	71,534	70,885	71,490
Australia.....	28,924	49,697	39,629	45,768	58,482	47,747	48,883	52,755
Fiji.....	387	519	424	654	1,055	1,121	579	814
New Zealand.....	12,799	18,844	7,475	14,807	22,344	17,995	16,964	15,103
Other British Oceania.....	25	71	64	103	84	118	113	98
French Oceania.....	80	424	487	389	477	482	386	271
Hawaii.....	1,207	6,280	5,385	3,222	3,924	3,859	3,752	2,310
United States Oceania.....	2	198	253	269	335	212	209	138
Totals, Exports.....	884,536	4,301,031	4,117,406	3,881,272	4,281,784	4,789,746	4,824,233	4,823,347
Totals, Commonwealth Countries.....	443,261	1,007,533	897,585	848,461	1,006,437	1,055,922	955,786	1,051,730
Totals, United States and Dependencies.....	323,124	2,322,177	2,433,614	2,329,792	2,574,728	2,836,405	2,887,114	2,848,639

¹ Less than \$500.

The proportion of imports subject to duty varies widely between countries and geographic areas. Generally the Canadian tariff imposes duties on a greater proportion of manufactured goods than of natural products. Countries supplying chiefly manufactures to Canada tend to have duties charged on a greater proportion of their goods and also to have relatively higher average *ad valorem* rates of duty charged on their goods than is the case with countries supplying chiefly natural products. Variations in the proportion of imports dutiable as between different countries or in the average *ad valorem* rates of duty charged on imports from different countries therefore do not necessarily indicate differences in the tariff relations between Canada and these countries.

8.—Values of Dutiable and Free Imports, by Leading Countries, 1956-58

Country	1956			1957			1958		
	Dutiable	Free	Total	Dutiable	Free	Total	Dutiable	Free	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
North America¹.....	2,572,802	1,592,704	4,165,506	2,460,435	1,542,880	4,003,315	2,183,128	1,393,419	3,576,547
United States.....	2,569,557	1,592,109	4,161,667	2,456,846	1,541,703	3,998,549	2,179,913	1,392,466	3,572,379
Central America and Antilles¹.....	98,953	63,975	162,928	115,440	47,322	162,762	110,000	56,729	166,729
Barbados.....	3,002	1,632	4,634	6,215	1,413	7,628	1,760	1,992	3,751
Jamaica.....	11,808	12,825	24,633	15,888	24,322	40,210	7,346	20,282	27,628
Trinidad and Tobago.....	2,412	8,639	11,051	3,352	4,853	8,205	3,163	6,688	9,851
Cuba.....	10,527	1,752	12,279	13,181	685	13,866	17,913	968	18,881
Honduras.....	6,908	171	7,079	4,527	43	4,575	4,771	132	4,903
Mexico.....	7,227	34,472	41,699	9,525	11,588	21,113	11,363	20,695	32,059
Netherlands Antilles.....	37,818	301	38,119	39,259	10	39,269	39,452	351	39,804
Panama.....	7,666	19	7,685	7,067	131	7,198	7,450	39	7,489

¹ Includes other countries not specified.

8.—Values of Dutiable and Free Imports, by Leading Countries, 1956-58—concluded

Country	1956			1957			1958		
	Dutiable	Free	Total	Dutiable	Free	Total	Dutiable	Free	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
South America¹	73,767	231,926	305,693	65,718	275,630	341,348	62,943	228,549	291,493
British Guiana.....	10,955	9,543	20,498	11,356	9,647	21,003	10,765	9,878	20,644
Argentina.....	1,451	3,175	4,626	2,396	2,307	4,703	2,630	2,806	5,437
Brazil.....	25,129	9,703	34,832	23,344	11,981	35,325	19,604	7,893	27,497
Colombia.....	17,699	5,357	23,056	15,462	2,728	18,190	13,654	2,931	16,585
Ecuador.....	4,422	76	4,498	4,421	7	4,428	4,952	15	4,967
Venezuela.....	11,563	196,839	208,401	6,349	241,796	248,145	9,399	200,191	209,590
Northwestern Europe¹	413,806	323,229	737,036	433,011	349,925	782,936	427,856	369,683	797,539
United Kingdom.....	220,510	264,169	484,679	232,979	288,979	521,958	213,146	313,504	526,650
Belgium and Luxembourg.....	40,873	11,855	52,728	33,100	10,966	44,066	26,351	9,671	36,022
Denmark.....	4,174	2,008	6,182	5,577	3,039	8,616	5,348	2,433	7,780
France.....	24,439	8,161	32,600	27,249	8,933	36,183	31,618	9,472	41,091
Germany, Federal Republic of.....	68,244	21,104	89,349	77,828	19,818	97,646	89,143	16,801	105,944
Netherlands.....	16,247	7,529	23,776	16,108	9,288	25,396	19,793	9,747	29,541
Sweden.....	13,080	4,223	17,303	12,218	3,350	15,568	11,081	3,060	14,141
Switzerland.....	19,411	2,890	22,301	20,941	3,719	24,660	23,535	3,433	26,968
Southern Europe¹	23,082	10,377	33,459	29,815	12,156	41,971	31,853	11,315	43,169
Italy.....	19,700	5,266	24,967	26,103	6,909	33,012	27,679	5,141	32,820
Spain.....	1,800	3,928	5,727	1,788	3,808	5,596	2,340	4,409	6,749
Eastern Europe¹	9,476	1,824	11,300	6,912	4,228	11,140	8,855	2,218	11,073
Czechoslovakia.....	5,427	248	5,675	4,409	636	5,045	4,794	156	4,950
Middle East¹	1,205	49,137	50,342	1,301	37,203	38,504	1,283	72,284	73,567
Arabia.....	13	24,699	24,712	4	34,313	34,317	4	68,020	68,023
Lebanon.....	3	19,598	19,601	5	38	43	9	72	81
Other Asia¹	60,643	93,901	154,544	61,985	87,103	152,088	82,968	65,869	148,837
Ceylon.....	765	15,799	16,564	810	14,106	14,916	770	12,100	12,869
Hong Kong.....	4,735	964	5,699	6,499	724	7,223	8,029	793	8,823
India.....	6,333	24,565	30,898	6,268	22,980	29,248	6,121	21,575	27,696
Malaya and Singapore..	320	28,238	28,558	473	26,882	27,355	985	18,918	19,904
China.....	565	5,156	5,721	486	4,818	5,304	1,637	3,738	5,376
Japan.....	46,382	14,445	60,826	48,672	12,933	61,605	64,476	5,739	70,216
Other Africa¹	15,861	19,367	35,227	17,388	20,220	37,608	13,877	14,360	28,237
British East Africa....	76	7,214	7,289	18	4,971	4,989	100	4,995	5,139
Mauritius and Seychelles.....	7,757	2	7,758	10,278	—	10,278	5,917	1	5,918
Union of South Africa..	2,944	5,457	8,401	802	6,058	6,860	1,743	6,287	8,030
Oceania¹	22,360	27,054	49,414	28,192	23,546	51,738	29,950	25,211	55,161
Australia.....	10,265	16,045	26,310	14,568	14,160	28,728	14,641	18,279	32,920
Fiji.....	6,266	1	6,267	7,216	2	7,218	5,204	524	5,728
New Zealand.....	1,597	10,724	12,321	2,573	9,197	11,770	5,544	6,049	11,593
Totals, Imports	3,291,955	2,413,494	5,705,449	3,223,197	2,400,213	5,623,410	2,952,714	2,239,637	5,192,351
Totals, Common-wealth Countries ...	295,266	410,644	705,911	325,810	435,009	760,819	291,480	445,032	736,512
Totals, Other Countries	2,996,689	2,002,850	4,999,538	2,897,387	1,965,204	4,862,591	2,661,233	1,794,606	4,455,839

¹ Includes other countries not specified.

9.—Average Ad Valorem Rates of Duty Collected and Percentage Proportions of Imports from the United Kingdom and from the United States to Totals of Dutiable and Free Imports, 1949-58.

NOTE.—Figures for the years ended Mar. 31, 1968-1939 are given in the 1940 Year Book, p. 532. Calendar year figures for 1939-48 are given in the 1954 edition, p. 982.

Year	United Kingdom					United States				
	Average Ad Valorem Rates of Duty on—		Dutiable to Total Dutiable	Free to Total Free	Percentage of All Imports	Average Ad Valorem Rates of Duty on—		Dutiable to Total Dutiable	Free to Total Free	Percentage of All Imports
	Dutiable Imports	Total Imports				Dutiable Imports	Total Imports			
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
1949.....	16.2	6.9	9.1	13.4	11.1	16.0	9.0	75.6	65.3	70.7
1950.....	16.6	6.2	9.3	16.3	12.7	16.3	9.0	72.6	61.4	67.1
1951.....	15.8	6.5	8.0	12.9	10.3	16.5	9.5	74.7	62.2	68.9
1952.....	16.5	7.2	7.3	10.9	8.9	16.8	9.6	78.4	68.7	73.9
1953.....	16.1	6.9	8.0	13.2	10.3	17.4	10.3	78.7	67.0	73.5
1954.....	16.4	7.1	7.4	12.4	9.6	17.3	10.5	77.9	65.2	72.3
1955.....	16.6	7.3	6.7	10.8	8.5	17.3	10.4	78.6	66.4	73.3
1956.....	15.8	7.2	6.7	10.9	8.5	16.7	10.3	78.1	66.0	72.9
1957.....	15.8	7.0	7.2	12.0	9.3	16.6	10.2	76.2	64.2	71.1
1958.....	20.8	8.4	7.2	14.0	10.1	16.9	10.3	73.8	62.2	68.8

10.—Values and Percentages of Trade with Selected Overseas Countries via the United States, 1957 and 1958

Country	Imports via the United States				Domestic Exports via the United States			
	1957		1958		1957		1958	
	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.
North America.....	—	—	—	—	170	1	226	1
Central America and Antilles²...	30,860	19.0	33,542	20.1	28,584	17.0	28,085	21.6
British West Indies.....	3,185	5.5	2,368	5.5	1,194	3.0	1,312	3.4
Costa Rica.....	7,270	84.5	6,102	85.6	949	40.1	1,111	38.5
Cuba.....	987	7.1	1,646	8.7	2,490	14.7	2,700	15.3
Dominican Republic.....	298	23.4	431	16.2	1,220	24.3	1,418	26.4
Guatemala.....	1,352	39.0	1,201	33.5	2,032	63.4	2,029	55.4
Haiti.....	57	3.8	111	10.3	780	34.8	841	38.3
Honduras.....	3,404	74.4	3,999	81.6	691	65.1	931	76.8
Mexico.....	7,284	34.5	10,119	31.6	14,330	33.6	12,704	40.2
Netherlands Antilles.....	660	1.7	179	0.4	729	54.8	949	59.5
Panama.....	6,065	84.3	6,937	92.6	852	2.8	1,048	19.4
South America².....	201,532	59.0	159,749	54.8	41,254	33.7	30,460	27.4
British Guiana.....	1,398	6.7	1,197	5.8	113	2.2	43	1.1
Argentina.....	499	10.6	403	7.4	7,536	53.1	923	14.2
Brazil.....	6,447	18.3	3,421	12.4	6,159	23.9	2,365	11.2
Chile.....	51	3.1	127	15.4	2,854	65.4	2,123	46.1
Colombia.....	3,071	16.9	952	5.7	4,985	34.0	3,251	23.4
Ecuador.....	509	11.5	94	1.9	1,275	45.8	793	24.7
Peru.....	124	4.4	137	5.8	3,264	32.3	4,736	41.2
Surinam.....	600	15.4	617	27.2	335	40.4	439	51.3
Venezuela.....	188,675	76.0	152,706	72.9	13,288	33.4	15,082	34.5
Northwestern Europe².....	1,502	0.2	2,088	0.3	25,550	2.1	31,143	2.4
United Kingdom.....	317	0.1	337	0.1	8,915	1.2	8,333	1.1
Austria.....	42	0.9	135	2.8	921	13.7	1,072	22.6
Belgium and Luxembourg.....	348	0.8	192	0.5	1,598	2.6	1,476	2.1
France.....	221	0.6	513	1.2	1,847	3.2	1,250	2.8
Germany, Federal Republic of.....	282	0.3	422	0.4	3,305	3.5	6,881	3.4
Netherlands.....	114	0.4	229	0.8	1,210	1.7	4,757	6.3
Switzerland.....	56	0.2	100	0.4	1,159	4.6	1,572	5.3
Southern Europe².....	1,018	2.4	1,741	4.0	8,762	11.1	6,898	15.1
Greece.....	22	4.8	26	6.8	1,189	28.9	920	19.8
Italy.....	843	2.6	1,592	4.9	5,156	8.2	3,502	11.7
Eastern Europe².....	201	1.8	193	1.7	970	3.2	1,118	4.5
Middle East².....	20,436	53.1	52,153	70.9	5,723	41.5	6,252	40.0
Arabia.....	19,998	58.3	51,254	75.3	660	39.7	898	44.5
Lebanon.....	1	2.3	3	8.7	337	30.2	391	17.4
Turkey.....	104	12.4	39	7.4	264	54.7	785	53.1

¹ Less than 0.1 p.c.

² Includes other countries not specified.

10.—Values and Percentages of Trade with Selected Overseas Countries via the United States, 1957 and 1958—concluded

Country	Imports via the United States				Domestic Exports via the United States			
	1957		1958		1957		1958	
	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.	\$'000	p.c.
Other Asia¹	14,529	9.6	19,903	13.4	19,844	8.7	13,859	5.6
India.....	794	2.7	89	0.3	1,713	5.9	734	0.9
Malaya and Singapore.....	178	0.7	27	0.1	1,249	37.7	1,464	45.3
Hong Kong.....	573	7.9	1,069	12.1	2,219	29.2	1,726	28.5
Indonesia.....	18	1.9	5	2.2	1,247	76.4	1,029	60.7
Japan.....	12,432	20.2	18,474	26.3	8,239	5.9	4,779	4.6
Thailand.....	5	0.8	21	3.2	458	22.4	291	22.5
Other Africa¹	6,533	17.4	995	3.5	26,926	40.9	24,881	38.7
Union of South Africa.....	303	4.4	24	0.3	19,440	40.1	18,874	37.7
Other British South Africa.....	—	—	—	—	2	2	4	80.0
British West Africa.....	3,517	42.1	263	5.8	3,227	98.0	1,661	77.8
Belgian Congo.....	2,289	68.6	299	26.6	1,782	67.9	1,804	61.5
French Africa.....	102	4.5	74	4.2	464	53.7	598	57.9
Morocco.....	25	8.6	22	11.8	405	55.3	387	31.5
Oceania¹	1,399	2.7	2,650	4.8	13,837	19.5	13,321	18.6
Australia.....	28	0.1	33	0.1	10,262	21.0	9,322	17.7
New Zealand.....	3	2	19	0.2	3,165	18.7	3,604	23.9
Totals	278,010	4.9	273,013	5.3	171,620	3.5	156,243	3.2

¹ Includes other countries not specified.² Less than \$500.³ Less than 0.1 p.c.

11.—Imports Credited to Countries of Central and South America, by Country of Consignment, 1957 and 1958

Country	1957				1958			
	Consigned from Country Credited		Consigned from United States to Canada	Total Imports as Credited	Consigned from Country Credited		Consigned from United States to Canada	Total Imports as Credited
	Direct to a Canadian Port	Via a United States Port			Direct to a Canadian Port	Via a United States Port		
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Central America and Antilles	116,396	30,860	15,506	162,762	109,935	33,542	23,252	166,729
Bermuda.....	241	6	—	247	461	3	—	463
British Honduras.....	102	75	33	210	39	60	46	145
Bahamas.....	144	15	8	167	178	18	8	204
West Indies Federation.....	55,227	3,170	33	58,430	40,544	2,350	100	42,994
Barbados.....	7,621	—	7	7,628	3,761	—	—	3,761
Jamaica.....	40,186	17	8	40,210	27,502	38	38	27,628
Leeward and Windward Islands.....	2,387	—	1	2,387	1,763	—	11	1,764
Trinidad and Tobago.....	6,034	5,153	18	8,205	7,538	2,312	1	9,851
American Virgin Islands.....	5	—	—	5	44	—	—	44
Costa Rica.....	356	7,270	980	8,606	657	6,102	369	7,127
Cuba.....	11,696	987	1,183	13,866	15,961	1,646	1,274	18,881
Dominican Republic.....	46	298	930	1,274	1,203	431	1,026	2,660
El Salvador.....	77	62	473	1,312	600	29	557	1,186
French West Indies.....	—	—	—	—	1	—	—	1
Guatemala.....	794	1,352	1,324	3,470	1,368	1,201	1,019	3,588
Haiti.....	201	57	1,236	1,494	151	111	819	1,080
Honduras.....	18	3,404	1,153	4,575	5	3,999	900	4,903
Mexico.....	7,324	7,284	6,505	21,113	5,471	10,119	16,469	32,059
Netherlands Antilles.....	38,345	660	264	39,269	39,624	179	—	39,804
Nicaragua.....	401	1	154	555	2,538	67	55	2,660
Panama.....	15	6,065	1,118	7,198	41	6,937	510	7,489
Puerto Rico.....	706	154	112	972	1,061	292	100	1,443

¹ Less than \$500.

11.—Imports Credited to Countries of Central and South America, by Country of Consignment, 1957 and 1958—concluded

Country	1957				1958			
	Consigned from Country Credited		Consigned from United States to Canada	Total Imports as Credited	Consigned from Country Credited		Consigned from United States to Canada	Total Imports as Credited
	Direct to a Canadian Port	Via a United States Port			Direct to a Canadian Port	Via a United States Port		
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
South America	110,912	201,532	28,904	341,348	101,116	159,749	30,628	291,493
British Guiana.....	19,602	1,398	3	21,003	19,443	1,197	4	20,644
Argentina.....	3,591	499	613	4,703	4,451	403	582	5,437
Bolivia.....	88		60	148	103	1	30	134
Brasil.....	17,932	6,447	10,946	35,325	12,733	3,421	11,342	27,497
Chile.....	1,193	51	373	1,622	211	127	458	825
Colombia.....	6,254	3,071	8,965	18,190	4,785	952	10,848	16,585
Ecuador.....	419	509	3,500	4,428	285	94	4,588	4,967
Paraguay.....	169	79	80	278	269	57	22	347
Peru.....	2,394	124	281	2,799	1,941	137	277	2,355
Surinam.....	2,656	600	643	3,899	1,598	617	56	2,270
Uruguay.....	557	79	173	809	787	38	16	841
Venezuela.....	56,052	188,675	3,418	248,145	54,509	152,706	2,375	209,590
Totals	227,308	232,392	44,410	504,110	211,051	193,291	53,880	458,222

Section 4.—Trade by Commodities

The tables in this Section provide detailed information on the composition of Canada's imports and exports, with commodities shown by group and individually.

12.—Imports and Exports, by Main Group, 1957 and 1958

Group	Imports		Domestic Exports		Total Trade ¹	
	1957	1958	1957	1958	1957	1958
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
United Kingdom	521,958	526,650	722,669	773,804	1,249,783	1,305,552
Agricultural and vegetable products.....	31,662	38,014	242,028	283,224	273,821	321,335
Animal and animal products.....	15,904	18,380	20,991	39,717	37,408	58,612
Fibres, textiles and textile products	102,510	86,078	4,380	2,567	107,267	89,214
Wood, wood products and paper...	6,638	8,069	142,310	133,403	149,007	141,524
Iron and its products.....	195,572	205,180	42,522	24,592	240,162	231,722
Non-ferrous metals and their products.....	64,663	64,010	222,032	223,245	287,309	287,676
Non-metallic minerals and their products.....	30,051	30,113	16,279	16,744	47,008	47,576
Chemicals and allied products....	23,168	23,553	28,480	35,752	51,796	59,421
Miscellaneous commodities.....	51,790	53,253	3,646	14,559	56,005	68,471
United States	3,998,549	3,572,379	2,867,608	2,827,417	6,940,225	6,487,144
Agricultural and vegetable products.....	323,380	328,963	191,715	179,542	518,572	510,008
Animals and animal products....	71,809	70,844	219,081	290,517	293,589	364,047
Fibres, textiles and textile products	209,338	195,328	10,391	8,487	221,720	205,807
Wood, wood products and paper..	201,223	206,340	1,171,903	1,163,180	1,374,289	1,370,853
Iron and its products.....	1,802,069	1,520,287	268,758	249,334	2,107,459	1,809,220

¹ Includes exports of foreign produce.

12.—Imports and Exports, by Main Group, 1957 and 1958—concluded

Group	Imports		Domestic Exports		Total Trade ¹	
	1957	1958	1957	1958	1957	1958
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
United States—concluded						
Non-ferrous metals and their products.....	328,765	287,035	573,813 ^r	600,621	908,314 ^r	901,639
Non-metallic minerals and their products.....	391,324	296,485	277,510 ^r	191,843	678,091 ^r	495,336
Chemicals and allied products....	252,947	246,950	77,963	79,399	333,301	330,857
Miscellaneous commodities.....	417,694	420,147	76,474	64,494	506,889	499,376
All Countries.....	5,623,410	5,192,351	4,824,233^r	4,823,347	10,542,929^r	10,118,640
Agricultural and vegetable products.....	652,225	652,686	831,579	885,339	1,485,679	1,540,028
Animals and animal products....	124,617	128,934	302,051	397,695	430,367	529,994
Fibres, textiles and textile products	408,651	387,357	27,162	20,660	438,458	411,028
Wood, wood products and paper....	225,888	235,608	1,456,125	1,413,989	1,683,394	1,651,178
Iron and its products.....	2,131,030	1,852,174	518,835	432,433	2,697,269	2,331,553
Non-ferrous metals and their products.....	484,863	432,178	981,742 ^r	1,023,607	1,473,759 ^r	1,471,198
Non-metallic minerals and their products.....	777,661	682,854	357,287 ^r	250,351	1,148,427 ^r	941,302
Chemicals and allied products....	293,821	290,358	195,303	197,051	491,983	492,369
Miscellaneous commodities.....	524,656	530,204	154,147	202,221	693,592	749,991

¹ Includes exports of foreign produce.

13.—Leading Imports, 1939, 1946 and 1955-58

NOTE.—Commodities are arranged in order of value in 1958.

Commodity	1939	1946	1955	1956	1957	1958
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Machinery (non-farm) and parts.....	42,831	120,287	445,875	628,521	631,599	532,916
Petroleum, crude and partly refined.....	39,650	89,433	229,779	271,291	305,557	278,540
Automobile parts (except engines).....	25,308	66,453	246,505	284,788	260,075	240,526
Electrical apparatus, n.o.p.....	27,891	47,788	226,715	257,292	249,328	240,112
Rolling-mill products (iron and steel).....	32,336	53,376	129,679	234,709	221,257	147,049
Automobiles, passenger.....	13,725	25,209	83,726	125,539	106,596	141,543
Engines, internal combustion, and parts.....	7,098	19,650	100,917	138,451 ^r	134,603 ^r	135,002
Tractors and parts.....	15,003	45,620	115,375	159,627	127,658	117,290
Aircraft and parts (except engines).....	5,550	9,448	138,091	91,304	93,691	94,836
Pipes, tubes and fittings (iron and steel).....	2,340	8,411	50,290	123,088	147,727	88,871
Farm implements and machinery (except tractors) and parts.....	5,915	22,732	62,874	72,522	74,572	81,007
Tourist purchases.....	9,487	9,125	71,467	75,205	77,403 ^r	78,947
Coal, bituminous.....	19,640	77,052	74,453	96,516	90,692	67,067
Cotton fabrics.....	10,935	54,163	53,400	62,130	65,049	66,168
Paperboard, paper and products.....	8,654	18,834	52,690	61,954	62,027	65,478
Fuel oils.....	1,650	33,066	77,754	81,799	76,204	64,886
Non-commercial items.....	5,430	14,173	72,929	83,098	72,328	62,244
Sugar, unrefined.....	9,983	32,416	52,312	55,828	75,632	58,578
Coffee, green.....	4,110	15,473	57,010	62,657	59,120	55,252
Synthetic plastics, primary forms.....	2,506	15,386	41,072	47,092	49,747	54,891
Parcels of small value.....	4,185	14,460	41,639	49,371	51,982	53,583
Apparel (except hats) of all textiles.....	6,941	12,222	39,039	44,793	47,034	48,903
Cotton, raw.....	17,176	42,812	61,031	58,748	49,487	45,416
Vegetables, fresh.....	6,150	25,748	38,852	43,694	41,614	43,431
Principal chemicals (except acids) n.o.p.....	12,321	16,734	57,677	61,871	54,487	41,785
Cooking and heating apparatus, and parts.....	2,332	10,462	36,324	41,717	38,265	38,009
Newspapers, magazines and advertising matter.....	8,436	13,434	34,794	34,435	35,727	37,012
Citrus fruits, fresh.....	8,860	34,632	29,903	32,596	32,864	36,058
Wool fabrics.....	10,408	20,115	31,948	40,191	40,938	35,848
Logs, timber and lumber.....	3,767	6,035	32,773	40,555	31,552	35,697
Refrigerators and freezers.....	1,189	5,201	43,935	44,622	35,113	34,795

13.—Leading Imports, 1939, 1946 and 1955-58—concluded

Commodity	1939	1946	1955	1956	1957	1958
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Books, printed.....	4,238	11,272	26,035	27,950	31,468	34,765
Tools.....	2,377	10,135	26,739	32,779	36,227	34,738
Medical, optical and dental goods, <i>n.o.p.</i>	4,035	10,442	22,952	26,133	28,943	32,334
Rubber, crude and semi-fabricated.....	12,860	10,013	44,110	40,610	39,101	30,779
Bauxite and alumina for aluminum.....	3,374	8,525	21,473	24,635	38,831	30,284
Gasoline.....	7,998	14,912	35,831	35,217	37,184	30,235
Drugs and medicines.....	3,992	9,440	25,018	26,560	28,729	29,619
Iron ore.....	4,179	6,467	31,563	38,722	36,387	28,932
Synthetic fabrics (piece goods).....	2,123	9,851	22,415	23,570	25,386	26,895

14.—Leading Domestic Exports, 1939, 1946 and 1955-58

NOTE.—Commodities are arranged in order of value in 1958.

Commodity	1939	1946	1955	1956	1957	1958
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Newsprint paper.....	115,687	265,865	665,877	708,385	715,490	690,209
Wheat.....	109,051	250,306	338,216	513,081	380,415	446,078
Planks and boards.....	48,829	125,391	385,313	326,445	281,681	292,013
Wood pulp.....	31,000	114,021	297,304	304,536	292,406	285,449
Uranium ores and concentrates.....			26,633	45,777	127,935	276,506
Aluminum, primary and semi-fabricated.....	25,950	51,390	210,971	234,806	229,386	222,442
Nickel, primary and semi-fabricated.....	57,934	55,205	215,169	222,909	248,253	212,580
Copper, primary and semi-fabricated.....	52,396	34,940	163,924	194,206 ¹	147,247 ¹	135,021
Aircraft and parts (except engines).....	347	9,507	19,906	49,545	39,910	109,113
Iron ore.....	43	4,353	99,814	144,443	152,281	107,674
Farm implements and machinery (except tractors) and parts.....	6,975	28,662	72,206	63,937	67,339	93,829
Asbestos, unmanufactured.....	2,902	23,839	94,804	99,895	107,058 ¹	90,745
Cattle, chiefly for beef.....	13,808	652	3,922	630	41,678	84,101
Barley.....		9,688	76,461	94,977	67,522	78,118
Petroleum, crude and partly refined.....	1	—	36,253	103,923	140,975	73,044
Fish, fresh and frozen.....	10,212	31,110	55,263	59,594	63,186	70,898
Whisky.....	7,914	29,650	60,862	68,660	66,994	70,276
Wheat flour.....	16,378	126,733	74,442	71,549	61,175	69,398
Zinc, primary and semi-fabricated.....	9,922	27,659	70,558	74,011	64,921	55,385
Machinery (non-farm) and parts.....	11,668	16,675	35,789	47,130	57,177 ¹	46,881
Fertilizers, chemical.....	9,179	32,108	56,296	49,211	48,958	46,476
Flaxseed (chiefly for crushing).....	1	11	31,279	43,624	64,719	45,046
Non-commercial items.....	2,402	39,951	25,227	34,000	40,954	38,229
Pulpwood.....	10,901	28,731	48,655	49,794	48,459	34,655
Fish, canned.....	11,549	30,428	18,217	17,450	13,868	33,706
Engines, internal combustion, and parts.....	202	1,737	17,391	17,614	26,735	32,789
Rolling-mill products (iron and steel).....	3,864	7,528	20,313	25,719	33,043	31,333
Synthetic plastics, primary forms.....	351	2,654	27,365	26,577	29,642	26,348
Lead, primary and semi-fabricated.....	9,850	16,715	37,194	35,025	29,396	26,099
Electrical apparatus, <i>n.o.p.</i>	3,229	20,939	20,700	21,407	25,188	24,944
Pigs, ingots, blooms and billets (iron and steel).....	2,691	3,328	33,695	20,749	42,226	24,278
Fur skins, undressed.....	14,130	30,928	28,287	25,893	25,944	23,322
Abrasives, artificial crude.....	4,380	11,727	26,942	28,389	33,911	22,717
Fish, cured.....	3,884	13,808	23,939	22,835	24,513	22,700
Plywoods and veneers.....	1,608	12,026	30,104	29,020	22,336	22,524
Beef and veal, fresh.....	1,226 ¹	27,224	2,721	3,644	13,356	20,185
Platinum metals, unmanufactured.....	6,178	15,450	26,315	35,656	27,821	19,837
Shingles.....	8,224	11,211	29,144	24,546	19,393	19,828
Automobiles, passenger.....	14,394	13,993	13,165	17,027	22,629	19,382
Molluscs and crustaceans.....	3,539	14,159	20,246	20,554	20,413	19,220

¹ Less than \$500.² Beef only.

Detailed Imports and Exports.—Detailed statistics of all commodities of any importance imported into Canada from all countries, from the United Kingdom and from the United States during the calendar years 1956-58 are given in Table 15 and corresponding statistics for domestic exports appear in Table 16.

15.—Principal Imports into Canada for Consumption from All Countries, the United Kingdom and the United States, 1956-58

NOTE.—Throughout this table certain revisions have been made in 1956 and 1957 figures since they were published in the 1959 Year Book. These changes, resulting from revisions in nomenclature or groupings, do not affect the totals.

Item	All Countries			United Kingdom			United States		
	1956	1957	1958	1956	1957	1958	1956	1957	1958
I. Agricultural and Vegetable Products (except chemicals, fibres and wood)									
A. MAINLY FOOD									
Fruits—									
Fresh.....	81,959,266	83,913,279	86,859,046	15,833	11,569	115,251	55,436,660	56,131,942	56,949,151
Dried.....	12,363,692	13,282,950	16,663,133	58	—	13,759	6,639,440	7,313,501	7,517,420
Canned or preserved.....	22,305,153	25,009,931	25,009,931	1,078,633	1,106,937	1,175,863	10,538,363	12,141,118	13,140,882
Fruit juices and fruit syrups.....	19,126,273	19,671,589	25,514,259	76,942	116,551	93,063	17,704,319	18,227,867	23,669,560
Totals, Fruits.....	133,765,487	139,172,981	154,046,369	1,171,516	1,235,057	1,397,916	90,318,782	93,814,428	101,277,023
Cocoanuts and preparations of.....	3,159,372	3,968,210	2,799,269	14,850	7,321	5,747	700,824	822,922	937,849
Nuts, not shelled and shelled.....	17,772,915	17,671,009	16,517,761	121,904	107,612	214,241	4,024,247	6,080,882	5,157,294
Vegetables—									
Fresh.....	47,827,730	44,175,627	46,671,247	23,180	8,978	24,476	45,234,069	40,842,304	40,533,495
Dried.....	905,854	987,307	1,218,251	82,883	87,172	125,482	712,440	788,711	1,004,874
Canned.....	10,571,160	13,516,245	9,822,428	228,801	7,305	40,184	7,199,338	10,342,561	6,618,432
Pickles, sauces and catsups.....	2,721,603	3,850,472	3,888,778	74,281	101,843	123,019	2,046,575	2,909,604	2,963,291
Totals, Vegetables.....	62,026,347	62,528,711	61,600,704	409,145	205,298	313,161	55,192,451	54,883,180	51,120,092
Grains and Farinaceous Products—									
Grain (including rice).....	44,080,274	44,065,903	46,890,306	92,045	62,993	57,142	40,917,869	41,269,698	41,288,071
Biscuits and other bakery products and prepared foods.....	6,328,153	7,087,512	7,831,195	2,717,153	3,420,105	3,721,414	3,222,445	3,195,179	3,403,934
Milled products and farinaceous products, n.o.p.....	1,690,252	1,490,654	1,902,469	6,579	2,278	8,295	1,548,031	1,357,038	1,674,868
Totals, Grains and Farinaceous Products.....	52,107,679	52,634,069	56,633,060	2,815,777	3,485,376	3,786,881	45,688,345	45,821,915	46,366,873
Oils, vegetable, edible.....	3,303,539	3,630,486	4,750,338	36,569	92,893	206,042	2,856,360	2,731,061	3,615,066
Sugar and Its Products—									
Confectionery, including candy.....	9,007,199	10,102,549	11,857,026	5,002,956	5,373,296	5,968,963	2,545,733	2,851,512	3,418,293
Molasses and syrups.....	4,481,078	5,534,424	5,450,526	232,266	47,119	69,090	1,441,660	1,677,968	1,605,673
Sugar and sugar products, n.o.p.....	56,183,197	77,311,551	58,994,523	11,290	16,013	8,625	117,059	13,628	11,105
Totals, Sugar and Its Products.....	69,671,474	92,948,524	76,302,075	5,246,512	5,436,428	6,046,678	4,104,452	4,543,108	5,035,071

Cocoa beans and cocoa and chocolate preparations.....	13,330,136	15,354,707	21,364,743	1,678,350	2,109,208	3,362,077	3,555,735	2,637,945	4,696,025
Coffee and chicory.....	72,367,670	71,509,762	67,211,437	323,127	189,704	78,870	11,248,456	14,248,456	14,248,456
Spices.....	2,518,960	2,737,153	459,363	320,029	319,662	319,662	53,533,340	15,669,090	880,428
Tea.....	24,384,461	23,006,539	1,242,732	2,146,587	2,710,959	52,440	181,057	144,186	144,186
Vegetable products, mainly food, <i>n.o.p.</i>	7,528,430	6,567,277	425,955	13,945,800	15,918,534	19,067,451	222,878,631	232,983,598	5,563,255
TOTALS, A. MAINLY FOOD.....	460,659,337	493,851,310	493,536,718	13,945,800	15,918,534	19,067,451	222,878,631	232,983,598	238,951,566
B. OTHER THAN FOOD									
Beverages, Alcoholic—									
Ale, beer, porter and stout.....	307,219	423,928	477,430	282,593	326,502	382,873	218	59,218	29,460
Whisky and other distilled beverages.....	16,336,105	17,741,153	17,986,139	9,502,337	9,963,308	9,077,779	1,648,864	2,018,467	1,998,718
Wines.....	4,674,451	5,312,921	5,859,105	509,409	472,344	544,733	141,705	231,244	360,178
TOTALS, Beverages, Alcoholic.....	21,337,775	23,478,002	24,322,674	10,294,339	10,762,214	10,605,385	1,790,787	2,308,899	2,388,356
Gums and resins.....	8,072,384	7,638,464	7,765,978	300,862	273,357	305,332	6,366,181	6,250,629	6,791,460
Oil cake and oil cake meal.....	12,392,378	12,392,378	8,636,269	—	—	—	12,390,899	9,200,438	8,578,928
Plants, vegetable, not edible.....	23,077,398	22,392,960	25,699,068	617,644	1,048,493	4,158,053	13,181,473	12,670,909	10,585,117
Oils, sirubus, tress, vines and florist stock.....	5,719,127	6,392,976	6,779,415	29,326	25,361	25,361	3,640,381	3,855,519	3,855,519
Rubber, crude and partially manufactured.....	40,609,908	39,100,763	30,779,295	716,075	388,136	339,777	15,754,986	15,832,274	14,753,207
Rubber, manufactures of.....	36,481,398	32,300,192	34,526,717	2,312,433	2,309,173	2,703,141	30,145,535	26,714,475	28,511,532
Seeds.....	8,542,505	8,281,262	7,874,321	1,028,930	111,544	110,710	6,504,541	4,871,307	6,238,157
Tobacco, unmanufactured.....	2,782,264	3,267,362	3,580,350	287,494	172,026	133,955	1,915,636	2,157,834	2,382,177
Tobacco, manufactured.....	1,940,998	2,189,190	2,193,050	307,889	420,994	307,889	1,470,257	1,456,823	1,480,494
Vegetable products, not food, <i>n.o.p.</i>	7,141,676	6,488,897	7,121,754	193,059	232,158	206,250	6,135,859	5,282,149	6,175,838
TOTALS, B. OTHER THAN FOOD.....	168,117,811	158,373,565	159,148,887	15,980,762	15,743,856	18,946,922	98,885,950	90,396,088	90,011,780
TOTALS, Agricultural and Vegetable Products.....	628,777,148	652,224,875	652,685,605	29,926,562	31,662,390	38,014,373	321,761,581	323,379,686	328,963,346
II. Animals and Animal Products (except chemicals and fibres)									
Animals, Living—									
Animals, pure bred, for improvement of stock.....	1,860,837	2,058,624	3,344,283	235,388	343,390	338,763	1,692,460	1,679,806	2,938,173
Common livestock.....	2,220,819	1,943,731	1,016,697	109,574	222,351	63,304	2,110,277	1,709,162	941,869
Animals, living, <i>n.o.p.</i>	1,236,474	1,201,575	1,528,165	14,829	18,680	—	980,155	984,148	1,252,077
TOTALS, Animals, Living.....	5,318,130	5,203,930	5,880,146	359,791	584,411	470,294	4,722,922	4,373,116	5,132,119
Fish and Fishery Products, <i>n.o.p.</i> —									
Fish, fresh and frozen.....	2,131,895	2,028,054	1,724,527	31,860	8,489	3,166	1,190,933	1,120,617	1,294,415
Fish, salted, dried, pickled and smoked.....	579,757	696,031	748,565	161,228	217,777	195,697	276,782	75,565	75,565
Fish, canned or preserved, <i>n.o.p.</i>	7,710,668	6,590,126	5,972,513	108,936	112,973	109,040	276,788	223,245	274,444
Molluscs and crustaceans.....	3,563,351	3,260,599	3,783,722	1,637	—	315	2,919,523	2,667,810	3,028,157
Sponges and other articles of the fisheries, <i>n.o.p.</i>	2,049,454	2,569,085	2,843,891	2,495	20,277	3,671	1,707,224	1,853,856	2,191,100
TOTALS, Fishery Products, <i>n.o.p.</i>	16,035,155	15,144,495	15,073,218	306,155	359,507	311,828	6,130,250	5,941,093	6,864,987

15.—Principal Imports into Canada for Consumption from All Countries, the United Kingdom and the United States, 1956-58—continued

Item	All Countries			United Kingdom			United States		
	1956	1957	1958	1956	1957	1958	1956	1957	1958
II. Animals and Animal Products—									
concluded									
Fur skins, undressed.....	19,231,127	20,932,925	20,632,199	3,253,206	2,830,173	4,657,924	13,431,675	14,542,482	13,023,625
Fur skins, wholly or partially dressed, and manufactures of fur.....	4,600,500	4,848,048	4,656,823	137,310	265,199	570,539	3,819,181	3,943,705	3,169,498
Hair and bristles, and manufactures of.....	1,417,569	1,350,450	1,349,966	586,385	629,165	598,081	4,411,517	598,081	598,081
Hides and skins, raw (except fur skins).....	9,153,659	7,390,254	6,987,312	15,635	33,257	51,791	8,097,966	6,963,276	6,818,513
Leather, unmanufactured.....	10,009,764	9,730,265	9,739,638	4,714,767	4,836,461	4,925,562	4,412,382	4,445,094	4,055,022
Leather, manufactures of.....	9,964,298	10,444,011	11,905,771	3,036,226	4,158,977	4,270,852	4,368,648	4,242,033	4,523,008
Meats, fresh and frozen.....	12,570,551	9,929,205	12,914,324	4,992	1,226	315	10,433,048	7,135,740	6,243,556
Meats, other, and preparations of meat.....	9,195,544	12,448,164	14,146,398	148,252	389,097	313,991	5,075,752	6,404,430	7,535,781
Milk and its products.....	4,590,193	5,948,516	5,802,581	47,377	283,995	70,635	752,926	1,016,709	7,763,764
Oils, fish, seal and whale.....	9,901,963	8,825,087	1,744,625	120,325	158,782	314,126	377,000	326,032	1,190,283
Animal oils, fats, greases and wax, n.o.p.....	4,325,315	6,664,211	2,823,204	171,926	240,532	56,911	4,041,443	5,057,043	2,614,840
Gelatine, edible.....	1,366,828	1,099,505	1,436,106	325,831	251,660	98,177	646,657	584,657	933,776
Sausage casings, cleaned.....	4,911,164	4,651,684	3,980,783	151,092	132,231	13,373	767,327	50,295	1,093
Animal products, n.o.p.....	8,562,563	7,916,326	9,851,797	923,892	951,433	1,655,612	6,053,413	6,341,734	7,628,726
Totals, Animals and Animal Products.....	122,154,323	124,617,076	128,933,911	15,298,163	15,993,506	18,380,016	73,065,039	71,808,976	70,843,500
III. Fibres, Textiles and Textile Products									
Cotton—									
Raw and unmanufactured.....	60,653,081	51,737,361	47,493,177	2,959	444	55,108	31,032,342	46,379,107	31,124,360
Yarn, thread and cordage.....	10,300,040	9,473,965	7,043,500	5,490,058	4,508,011	2,772,330	4,600,835	4,832,403	5,024,092
Piece goods (fabrics).....	62,129,799	65,048,398	60,168,371	5,526,598	6,239,225	4,007,317	44,314,368	46,500,584	48,200,602
Lace and embroideries.....	1,842,587	1,510,030	1,551,682	120,674	100,855	109,621	618,171	517,503	543,656
Clothing and wearing apparel.....	12,401,204	13,682,568	15,248,904	1,597,692	1,644,898	1,473,457	5,555,781	5,443,082	5,416,739
Cotton manufactures, n.o.p.....	13,443,175	13,426,518	13,681,893	1,855,837	1,193,489	1,097,237	8,223,150	8,896,671	9,102,674
Totals, Cotton.....	160,859,886	154,876,081	151,995,536	14,099,848	13,692,021	9,498,070	95,434,637	112,608,410	100,403,465
Flax, Hemp and Jute—									
Yarn, thread and twine.....	2,046,634	1,855,060	1,831,377	1,364,766	1,142,110	1,184,168	202,781	145,374	124,052
Piece goods (fabrics).....	13,249,072	12,889,371	13,062,608	1,478,094	1,480,230	1,354,334	1,086,200	900,447	941,056
Other flax, hemp and jute and manufactures of.....	9,218,817	8,444,344	8,682,142	2,741,564	2,643,786	2,030,842	3,450,158	3,366,920	3,708,579
Totals, Flax, Hemp and Jute.....	24,514,523	23,188,775	23,600,127	5,580,424	5,266,126	4,569,344	4,748,139	4,412,741	4,773,686

Silk— Piece goods (fabrics)..... Clothing and wearing apparel..... Other silk, and manufactures of..... Totals, Silk.....	6,228,254	6,684,086	6,816,837	101,868	95,550	91,124	3,981,639	4,240,266	4,273,744
	2,093,875	2,188,529	2,369,089	13,106	220,945	211,004	794,731	808,881	811,046
	353,812	371,420	279,372	13,106	16,843	11,887	268,737	280,860	221,812
Wool— Raw and unmanufactured..... Yarns and wools..... Piece goods (fabrics)..... Carpets and rugs..... Clothing and wearing apparel..... Wool manufactures, n.o.p..... Totals, Wool.....	8,675,941	9,243,985	9,465,298	359,639	333,338	314,015	5,045,107	5,330,007	5,407,202
	34,749,839	31,991,943	22,688,961	15,804,621	17,445,231	13,446,264	3,940,118	3,840,496	2,256,999
	3,879,136	3,827,964	3,590,061	3,224,743	3,167,986	3,087,209	138,589	135,589	94,359
Synthetic Textile Fibre— Unmanufactured synthetic textile fibre..... Yarn, twist and thread..... Piece goods (fabrics)..... Clothing and wearing apparel..... Synthetic textile fibre manufactures, n.o.p..... Totals, Synthetic Textile Fibre.....	40,190,538	40,438,139	35,847,765	35,261,792	33,420,217	29,184,815	920,951	906,382	1,169,301
	11,999,948	11,615,251	9,996,564	4,336,766	4,537,478	3,417,544	407,296	423,901	438,628
	14,821,199	14,503,771	13,159,063	9,671,515	9,938,701	7,941,886	1,100,365	1,311,192	1,233,498
Knapok; manila fibre; sisal, istle and tampico fibres; and other vegetable fibres not coloured or further manufactured when dried, cleaned, cut to size, ground and sifted..... Grasses and vegetable fibres, and manufactures of, n.o.p..... Mixed Textile Products— Rags and waste..... Cordage, rope, twine, threads, fish nets and nettings, and fish lines, n.o.p..... Oilcloths and other coated or impregnated cloth..... Lace and embroideries, n.o.p..... Hats, caps, bonnets, berets, hoods and shapes..... Clothing and wearing apparel, n.o.p..... Hat braids, hat sweats, etc., for hats and caps..... Totals, Mixed Textile Products..... Other textile products.....	1,671,420	1,769,221	1,434,053	894,569	903,124	624,856	531,099	530,937	559,349
	107,012,080	104,646,289	86,716,467	69,194,006	68,812,737	57,701,727	7,128,418	7,091,909	5,762,132
	7,257,213	9,563,880	4,432,144	1,076,988	541,661	347,666	5,729,043	8,390,703	3,196,767
Totals, Fibres, Textiles and Textile Products.....	7,647,402	5,835,418	7,210,348	248,872	233,822	173,476	4,947,542	4,370,088	5,828,626
	23,569,720	25,330,617	26,894,810	811,101	823,391	20,378,154	20,378,154	21,290,068	23,091,926
	11,460,555	12,130,010	13,478,603	2,213,068	2,779,993	2,011,973	6,907,902	6,386,856	6,537,711
Totals, Fibres, Textiles and Textile Products.....	5,827,830	6,845,838	7,414,779	352,421	375,232	311,454	4,910,757	5,822,973	6,288,415
	55,762,720	59,711,763	59,430,684	4,702,450	4,754,039	3,665,596	42,873,398	46,260,668	44,913,445
	7,463,070	7,474,769	5,771,944	66,777	50,102	47,222	1,440,297	2,480,441	2,738,599
Totals, Fibres, Textiles and Textile Products.....	1,257,196	1,085,797	1,099,419	63,871	93,641	104,101	657,617	348,975	402,024
	8,992,374	8,435,853	6,999,651	586,948	828,813	505,479	7,671,432	7,012,934	5,829,514
	6,218,172	5,833,967	6,192,929	2,729,457	2,574,699	2,690,167	962,086	890,994	765,026
Totals, Fibres, Textiles and Textile Products.....	18,695,940	17,094,687	19,330,814	4,764,790	4,628,394	5,493,990	12,381,454	11,406,051	12,839,676
	2,394,919	2,341,872	2,805,604	162,715	203,856	180,413	1,571,262	1,524,486	2,022,189
	4,408,056	4,581,843	4,204,860	393,730	419,719	379,060	2,667,039	2,549,445	2,490,099
Totals, Fibres, Textiles and Textile Products.....	2,484,081	2,807,951	2,308,396	96,140	84,075	79,412	2,088,739	2,285,325	1,641,075
	890,146	1,097,909	859,243	7,082	5,017	7,673	510,492	576,182	514,906
	44,083,690	42,194,082	42,701,497	8,730,863	8,744,553	9,336,194	27,852,504	26,245,417	26,202,465
Totals, Fibres, Textiles and Textile Products.....	6,760,945	6,220,488	6,569,720	790,063	763,390	871,956	4,874,057	4,559,624	4,735,287
	416,390,051	408,651,029	387,356,692	103,587,941	102,509,949	86,078,225	190,054,174	209,338,192	195,828,325

15.—Principal Imports into Canada for Consumption from All Countries, the United Kingdom and the United States, 1956-58—continued

Item	All Countries			United Kingdom			United States		
	1956	1957	1958	1956	1957	1958	1956	1957	1958
IV. Wood, Wood Products and Paper									
Wood, Unmanufactured or Partially Manufactured.....									
Logs and unmanufactured round timber....	12,414,004	9,884,731	8,033,302	—	—	—	12,411,949	9,883,902	8,033,302
Lumber and timber, <i>n.o.p.</i>	33,067,885	25,279,512	27,664,577	3,298	4,488	10,880	31,070,892	23,855,933	27,624,055
Plywoods, veneers and other sawmill and planing mill products, <i>n.o.p.</i>	6,097,732	7,464,414	7,464,414	2,536	8,241	148,013	3,240,088	2,481,521	2,713,997
Pulpwood and other unmanufactured wood..	4,181,386	3,896,096	3,662,888	360	—	—	3,872,057	3,778,269	3,564,330
Totals, Wood, Unmanufactured or Partially Manufactured.....	55,681,007	44,988,435	48,815,181	6,194	12,729	158,903	50,594,986	39,999,625	41,835,684
Wood, Manufactured—									
Barrels, staves, headings and other cooperage.....	2,215,987	2,128,468	1,489,191	9,212	10,977	13,252	2,206,775	2,117,373	1,476,427
Corks and other manufactures of corkwood	4,356,169	4,353,169	3,648,596	71,228	117,077	96,536	2,072,676	1,777,787	1,248,211
Wood pulp.....	8,117,220	8,343,109	7,345,662	1,266	344	—	8,116,964	8,337,516	7,189,106
Fibre, vulcanized, kartavert, indurated fibre and like material, and manufactures of, <i>n.o.p.</i>	1,105,602	1,172,232	987,727	12,197	17,358	11,290	1,055,854	1,099,746	884,702
Furniture (except of metal).....	6,772,678	7,371,259	8,305,789	192,963	174,094	233,067	5,836,432	5,836,432	6,174,966
Manufactures of wood, <i>n.o.p.</i>	10,355,953	11,308,862	10,727,386	316,187	277,007	513,215	8,523,605	9,239,594	8,247,254
Totals, Wood, Manufactured.....	32,923,639	34,739,089	32,504,351	603,043	596,857	867,360	27,532,230	28,408,448	25,219,666
Paper—									
Wallboard and other pulpboards and fibreboards.....	18,762,196	18,580,743	19,238,405	144,627	191,849	202,606	17,872,160	17,671,009	18,020,360
Printing paper.....	4,602,101	4,289,834	4,912,764	357,142	360,373	463,918	4,229,431	3,907,129	4,418,193
Wrapping and packing paper.....	1,981,367	2,885,746	3,690,770	40,263	38,486	53,529	1,921,752	2,822,227	3,591,065
Writing, bond and ledger papers.....	1,330,773	1,169,855	1,171,359	22,701	15,555	29,617	1,289,497	1,142,165	1,121,753
Waste paper of all kinds.....	2,160,730	1,281,584	1,676,854	—	—	—	2,149,748	1,281,584	1,676,854
Albumenized and other chemically prepared papers for photographers use, <i>n.o.p.</i>	3,540,753	3,708,616	3,603,833	86,426	83,440	94,173	2,896,400	2,842,138	2,740,215
Cigarette paper.....	1,538,691	1,670,430	1,723,885	365	1,351	1,329,783	1,329,783	1,559,025	1,559,025
Cable insulating paper.....	2,015,151	1,598,982	1,428,692	111,572	31,926	14,941	1,835,958	1,528,831	1,409,516
Shipping and other containers of paperboard and fibreboard.....	5,391,240	5,203,947	4,872,912	34,878	52,030	26,649	5,341,776	5,099,339	4,881,282
Paper, and manufactures of, <i>n.o.p.</i>	20,904,352	21,858,929	23,416,753	1,315,246	1,235,003	1,201,245	18,890,498	19,841,455	21,524,586
Totals, Paper.....	62,217,354	62,248,666	65,735,027	2,113,220	2,009,625	2,088,029	57,757,003	57,668,088	60,891,819

15.—Principal Imports into Canada for Consumption from All Countries, the United Kingdom and the United States, 1956-58—continued

Item	All Countries			United Kingdom			United States		
	1956	1957	1958	1956	1957	1958	1956	1957	1958
V. Iron and Its Products—concluded									
Farm Implements and Machinery—concluded									
Harvesters combined with threshing machines and parts.....	15,222,762	16,384,583	19,472,265	73,556	55,548	90,239	15,110,500	16,319,628	19,380,349
Seed separation machinery, <i>n.o.p.</i>	1,533,644	1,193,625	893,969	—	—	344	1,533,644	1,193,625	893,507
Spraying and dusting machines.....	2,142,570	1,796,102	2,124,366	25,238	18,709	30,276	2,088,977	1,761,613	2,067,144
Tractors, internal combustion, and parts of tractors, internal combustion, and accessories including parts therefor.....	108,999,659	82,908,977	76,482,366	2,197,935	4,713,830	4,845,702	106,628,902	78,025,602	71,618,167
Farm implements, and machinery, and parts, <i>n.o.p.</i>	50,626,426	44,688,982	40,802,518	618,336	784,972	986,551	49,895,678	43,754,820	39,068,855
Totals, Farm Implements and Machinery	29,533,118	30,021,915	29,926,469	338,796	329,268	308,080	29,015,768	29,299,546	29,257,607
	232,148,405	202,229,611	198,291,713	3,728,298	6,228,412	6,670,924	226,730,592	194,263,777	189,945,744
Hardware and Cutlery—									
Cutlery.....	4,758,153	4,665,648	5,342,223	1,044,583	859,271	993,095	1,582,773	1,405,359	1,281,817
Nails, spikes and tacks.....	2,123,803	2,333,150	2,607,017	369,487	1,422,135	1,222,232	547,078	492,045	433,516
Bats, hinges, bolts, nuts, washers, rivets and screws.....	11,786,081	10,229,765	8,813,929	1,244,140	1,312,515	1,069,265	9,425,132	8,017,997	6,413,558
Hardware, <i>n.o.p.</i>	5,958,096	6,287,179	6,919,631	1,063,092	1,129,518	1,263,732	4,518,112	4,603,455	4,999,516
Totals, Hardware and Cutlery.....	24,626,133	23,515,742	23,682,800	3,721,302	4,723,439	4,568,354	16,073,095	14,518,856	13,098,407
Machinery (except agricultural)—									
Sewing machines, washing machines, vacuum cleaners and other household machinery.....	25,258,954	25,797,802	26,567,117	2,253,531	2,651,917	2,444,888	19,620,236	19,741,261	20,374,440
Ore crushers, rock drills, well-drilling and other mining and metallurgical machinery.....	113,433,602	102,859,345	68,300,166	4,749,261	6,851,150	6,149,398	105,757,014	93,332,728	59,837,493
Office or business machinery.....	30,874,962	34,130,674	27,692,211	3,610,242	3,800,185	3,056,048	24,535,447	26,662,341	20,459,701
Printing and bookbinding machinery.....	27,036,223	30,480,423	25,584,804	1,890,463	1,840,611	1,917,141	23,220,355	26,084,195	20,273,092
Air and gas compressing machinery, <i>n.o.p.</i>	13,954,739	15,377,959	15,677,959	684,418	986,401	1,238,761	12,932,058	13,962,826	14,227,058
Bakery machinery and apparatus.....	3,380,628	3,407,593	3,407,325	111,818	188,199	212,020	3,225,598	3,192,934	3,147,638
Cranes, hoists and derricks, <i>n.o.p.</i> , and parts <i>n.o.p.</i>	15,263,905	16,992,162	11,491,013	1,180,580	1,312,339	1,972,379	13,500,691	14,951,697	8,993,357
Ice-making and refrigerating machinery, <i>n.o.p.</i>	7,981,267	7,436,853	8,100,172	173,904	226,178	160,653	7,768,672	7,167,964	7,904,399
Logging machinery.....	19,749,553	12,207,451	8,442,110	231,676	376,093	322,641	19,362,099	11,685,250	7,922,133
Metal-working machinery.....	54,162,930	66,299,401	46,642,791	5,813,182	6,534,147	5,377,504	42,901,184	53,446,150	35,755,115
Motion-picture projectors and other equipment for moving pictures.....	2,761,704	3,383,599	3,958,573	47,438	50,891	50,891	2,560,553	3,115,503	3,487,090
Paper mill machines, <i>n.o.p.</i>	12,843,018	15,136,348	12,986,915	1,187,054	2,206,019	1,075,293	11,351,068	12,525,944	11,542,649
Pumps, power, <i>n.o.p.</i> , and parts.....	12,362,525	12,340,242	11,932,399	587,357	832,556	1,106,575	11,385,478	11,170,737	10,412,650

Concrete road-paving machines and other equipment for road paving.....	8,440,354	7,840,905	6,472,915	130,110	254,310	405,018	8,249,223	7,579,406	5,989,468
Sand cast rolls and chilled cast iron rolls, and forged steel rolls.....	4,683,307	5,024,823	3,860,619	618,637	540,160	583,391	4,061,465	4,397,912	3,284,205
Shovels, power, and parts.....	34,288,031	26,325,651	17,154,202	1,287,618	427,462	470,168	32,860,530	25,802,135	16,469,848
Yarn, cordage, and fabric machinery.....	20,078,371	23,041,361	16,617,366	2,652,870	3,051,349	2,416,873	16,584,945	18,632,589	13,223,589
Air-conditioning apparatus.....	15,757,869	15,262,160	9,832,659	330,864	362,013	699,016	15,242,481	14,620,580	9,138,085
Buildings, earthenware and parts.....	20,919,477	15,188,963	13,140,713	439,742	509,282	674,150	20,471,500	14,632,795	12,456,674
Conveying equipment and parts.....	11,511,580	12,240,615	6,747,909	535,903	1,050,039	716,480	10,871,074	10,701,006	5,406,476
Woodworking machinery, and parts, n.o.p.....	5,990,527	4,431,025	6,131,156	544,263	381,294	386,115	4,967,030	3,683,037	5,389,406
Machinery, and parts, n.o.p.....	167,807,351	176,388,176	182,014,919	10,953,686	12,691,905	14,544,064	150,366,659	154,909,905	156,963,930
Totals, Machinery (except agricultural)....	628,520,977	631,599,360	532,916,013	39,394,315	47,186,381	46,109,800	561,795,340	552,022,896	452,688,584
Stamped and coated products.....	14,140,452	14,124,264	15,749,513	420,200	397,344	405,731	13,248,586	13,192,016	14,807,670
Tools and hand implements.....	32,778,745	36,227,277	34,737,853	3,754,791	3,611,868	3,583,664	25,153,770	28,068,945	26,882,765
Vehicles (see also Miscellaneous Commodities)—									
Automobiles freight, new.....	45,846,338	29,326,889	23,668,313	756,335	1,154,034	1,795,086	43,389,996	26,481,462	19,249,846
Automobiles, passenger, new.....	126,589,468	106,596,422	141,542,720	23,284,660	31,351,260	54,296,530	88,153,676	55,638,397	52,345,979
Automobile parts.....	284,787,685	260,075,478	240,525,003	3,522,562	4,178,578	4,646,756	280,248,407	254,275,261	233,851,632
Factory and warehouse trucks, motor driven, and parts.....	4,649,734	2,594,352	1,034,467	83,859	79,829	36,716	4,555,032	2,614,472	997,751
Fork lift trucks, and parts.....	10,556,590	9,590,128	8,383,142	296,576	401,672	396,329	10,251,429	8,956,617	7,954,064
Railway cars, and parts.....	12,342,798	15,183,677	6,857,316	2,368,772	668,543	956,717	9,654,717	15,203,327	5,845,945
Vehicles, and parts, n.o.p.....	10,190,862	7,380,826	7,900,671	4,477,197	3,726,851	3,611,995	6,254,615	2,992,339	3,354,218
Totals, Vehicles (see also Miscellaneous Commodities).....	493,913,335	431,307,472	426,747,231	34,788,961	41,500,767	65,327,599	441,807,812	365,061,905	323,629,435
Ball and roller bearings, and parts.....	20,238,840	20,041,958	16,020,093	1,200,475	1,496,973	1,601,410	16,114,194	15,876,496	12,925,015
Bottles, cylinders, drums, barrels and tanks.....	6,214,343	5,188,667	3,564,570	1,205,546	210,899	283,263	6,669,382	4,838,890	3,429,774
Furniture of metal.....	9,106,210	8,603,280	8,792,233	387,340	206,278	283,475	8,610,248	8,214,814	8,352,118
Guns, rifles and other firearms.....	6,721,510	6,300,202	5,098,073	387,451	260,902	676,968	4,611,365	3,884,822	3,884,822
Scales, balances, weighing beams and scales.....	4,264,962	3,847,673	3,266,681	178,123	199,061	89,849	3,846,665	3,361,977	2,870,778
Stoves and other heating and cooking apparatus for electricity, gas, oil, coal, wood or other fuel, and parts.....	41,717,161	38,264,800	38,008,567	550,384	1,256,566	837,852	41,011,641	38,873,729	36,956,957
Valves, iron.....	12,658,652	14,876,351	11,631,390	586,797	1,110,804	1,034,304	11,814,084	13,487,987	10,267,941
Other iron.....	90,022,349	85,420,122	80,320,810	7,877,877	8,738,735	8,072,225	79,469,355	72,383,986	69,387,439
Totals, Iron and Its Products.....	2,221,354,360	2,131,029,578	1,652,173,883	162,938,833	195,572,460	205,179,761	1,939,666,457	1,592,069,311	1,520,287,194
VI. Non-ferrous Metals and Their Products (except gold)									
Aluminum—									
Bauxite and alumina.....	29,182,829	44,966,467	33,760,339	5,071	5,850	2,559	1,228,798	5,874,773	718,937
Aluminum, and manufactures of, n.o.p.....	37,314,617	31,163,400	30,994,928	10,038,663	7,118,049	4,676,988	22,560,580	19,677,701	23,793,914
Totals, Aluminum.....	66,497,446	76,129,867	64,755,267	10,043,724	7,123,899	4,679,547	23,789,378	25,552,474	24,510,851

15.—Principal Imports into Canada for Consumption from All Countries, the United Kingdom and the United States, 1956-58—continued

Item	All Countries			United Kingdom			United States		
	1956	1957	1958	1956	1957	1958	1956	1957	1958
	\$	\$	\$	\$	\$	\$	\$	\$	\$
VI. Non-ferrous Metals and Their Products (except gold)—concluded									
Brass—									
Brass valves, plated or not.....	4,811,208	4,413,274	4,368,000	66,514	126,062	133,680	4,406,885	4,016,467	3,823,902
Brass, and manufactures of, <i>n.o.p.</i>	18,547,988	19,266,299	20,946,804	1,919,692	2,058,460	2,704,213	15,746,612	16,181,118	16,583,556
Totals, Brass.....	23,359,196	23,679,573	25,314,804	1,986,206	2,184,522	2,837,893	20,153,497	20,197,585	20,407,458
Copper, and manufactures of.....	12,425,965	8,636,810	5,795,127	1,779,986	1,217,714	1,735,346	8,543,221	7,205,194	3,716,027
Nickel, and manufactures of.....	6,746,447	5,711,573	5,728,110	283,285	359,210	203,850	6,053,674	4,893,179	5,189,789
Precious Metals—									
Electro-plated ware.....	16,927,199	12,929,005	13,616,359	1,223,430	987,329	998,672	13,560,729	10,805,576	11,200,165
Platinum crucibles and other manufactures of platinum.....	21,347,035	16,794,382	10,176,492	19,139,549	15,197,258	8,204,343	1,914,056	1,570,584	1,972,149
Precious metals, and manufactures of, <i>n.o.p.</i>	2,003,373	2,616,510	966,549	535,371	491,139	466,070	1,317,027	2,017,843	384,863
Totals, Precious Metals.....	40,277,607	32,339,897	24,759,400	20,898,350	16,675,726	9,669,085	16,791,812	14,394,003	13,557,177
Tin, blocks, pigs, bars or granular form.....	8,194,367	8,538,741	7,060,387	936,951	704,204	511,326	806,849	978,809	881,920
Zinc, and manufactures of.....	3,744,010	3,452,826	3,248,468	167,908	122,914	189,615	3,349,960	3,091,895	2,852,090
Alloys, <i>n.o.p.</i>	2,799,896	2,012,397	1,751,153	1,033,886	635,614	691,434	1,522,763	1,204,695	827,020
Clocks and watches, and parts.....	12,724,277	13,341,661	11,647,410	401,252	535,080	429,400	2,989,038	2,850,005	2,260,289
Electrical Apparatus, <i>n.o.p.</i> —									
Batteries.....	2,974,981	3,533,594	3,438,759	293,665	488,301	435,119	2,606,574	2,861,762	2,778,787
Dynamos or generators, and parts, <i>n.o.p.</i>	15,629,989	17,058,274	12,113,738	2,783,577	2,241,241	1,564,914	12,593,018	13,894,246	8,275,032
Electric lamps, incandescent.....	2,690,412	3,909,125	3,304,979	18,451	19,493	19,493	2,329,356	3,580,805	2,789,404
Electric motors.....	20,308,042	20,982,355	16,187,760	2,785,056	3,301,990	2,973,760	17,227,653	17,338,628	13,007,906
Telephone apparatus.....	16,477,431	18,127,042	15,020,488	2,208,437	2,465,711	4,252,485	14,124,150	15,449,175	10,222,198
Radio tubes.....	8,894,557	6,495,016	7,401,964	191,628	110,086	151,436	8,479,633	6,051,550	6,783,966
Radio and television sets.....	2,958,572	3,340,698	8,451,932	97,138	150,576	223,721	2,399,538	1,914,165	4,323,239
Radio and wireless apparatus, <i>n.o.p.</i>	58,843,293	45,883,180	46,603,314	6,433,228	5,957,956	6,329,436	51,350,959	38,517,498	38,545,866
Other electrical apparatus, <i>n.o.p.</i>	128,545,212	129,998,542	127,558,948	13,302,152	12,628,527	17,618,068	108,735,678	109,739,871	100,501,517
Totals, Electrical Apparatus, <i>n.o.p.</i>	257,292,489	249,327,826	240,111,912	28,113,332	27,658,598	33,568,432	219,846,259	209,407,700	187,227,915
Gas apparatus.....	2,139,874	2,983,203	2,188,984	245,716	316,205	236,546	1,822,456	2,571,144	1,890,748
Stereotypes, electrotypes and other printing materials.....	2,260,958	2,561,151	2,376,614	53,074	83,450	61,578	2,173,447	2,439,736	2,232,810
Chrome ore and ores of metals, <i>n.o.p.</i>	3,896,518	10,427,093	2,318,509	3,161	15,555	15,775	1,286,197	5,550,901	459,633
Manganese ore.....	9,137,278	7,519,746	1,722,965	25,592	29,544	30,056	4,105,351	528,499	767,675

Buckles, clasps, eyelets, hooks and eyes, dome, snap or other fasteners of metal, coated or not, *n.o.p.* (not being jewellery); slide, hook-less or zipper fasteners.....
Articles, *n.o.p.*, of metal, not made in Canada, for the construction or equipment of ships...
Other non-ferrous metals, and manufactures of

Totals, Non-ferrous Metals and Their Products.....

VII. Non-metallic Minerals and Their Products (except chemicals)

Asbestos, and manufactures of.....

Clay, and Manufactures of—

Bricks.....
Clays.....
Pottery and tiles.....
Pottery and chinaware.....
Clay manufactures, *n.o.p.*.....

Totals Clay, and Manufactures of.....

Coal, anthracite.....
Coal, bituminous, and coal, *n.o.p.*.....
Briquettes.....
Coke.....
Coal products, *n.o.p.*.....

Glass—
Tableware, bottles, flasks, lamp bulbs, and other glass, cut, pressed or blown.....
Plate, sheet and common, colourless window glass.....
Glass, and manufactures of, *n.o.p.*.....

Totals, Glass.....

Petroleum and Products—

Petroleum, crude.....
Fuel oil, *n.o.p.*.....
Kerosene, *n.o.p.*.....
Gasoline.....
Lubricating oils.....
Petroleum greases and lubricating greases, *n.o.p.*.....
Paraffin wax.....
Petroleum products, *n.o.p.*.....

Totals, Petroleum and Products.....

1,829,797	1,896,122	1,923,286	126,142	113,729	122,769	1,618,069	1,718,209	1,701,181
6,849,469	5,894,052	8,323,533	2,202,555	2,600,354	4,807,567	4,486,005	3,050,760	3,213,874
31,365,023	30,408,972	23,151,809	4,455,603	4,226,325	4,215,060	23,842,157	23,132,365	15,342,697
491,538,617	484,862,510	432,177,738	72,756,723	64,662,643	64,010,279	343,180,131	328,765,233	287,065,163
5,383,635	5,157,051	4,202,751	1,377,428	1,683,970	932,080	3,731,323	3,210,343	3,017,054
5,253,300	5,411,725	4,703,226	795,108	798,563	690,017	4,499,997	4,653,198	4,001,611
21,789,090	19,392,180	15,890,421	1,585,214	1,288,481	1,705,895	19,124,283	17,374,118	13,044,676
16,296,972	15,539,072	16,686,990	11,737,127	10,385,507	11,537,791	2,507,211	2,750,132	2,812,053
9,256,700	7,496,297	7,716,700	1,941,377	1,637,031	1,648,947	6,823,668	6,720,459	5,332,860
52,596,062	47,770,174	44,997,837	15,998,826	13,569,562	15,662,650	32,955,159	30,497,907	25,191,209
30,060,480	24,605,035	19,130,513	2,404,487	2,445,831	1,055,440	27,655,993	22,159,204	18,075,073
98,676,190	93,109,441	68,835,469	— 987	—	—	98,675,203	93,109,441	68,835,469
1,581,690	937,679	536,344	—	—	—	1,581,690	937,679	536,344
13,201,239	17,012,522	9,208,603	— 956	2,166	2,900	13,200,283	17,010,356	9,205,703
3,772,358	4,557,505	6,021,058	735,120	1,451,435	932,281	2,430,849	2,525,375	4,122,372
20,141,358	21,392,947	23,783,318	1,718,658	1,431,212	1,206,145	16,669,840	17,854,182	19,928,142
21,648,262	17,141,557	20,155,284	5,692,266	4,246,687	5,109,826	7,934,769	7,695,914	7,141,261
9,444,017	10,090,743	10,296,458	760,633	680,811	886,730	6,692,677	6,972,999	6,594,963
51,233,637	48,625,247	54,235,060	8,171,557	6,358,710	7,382,701	31,297,286	32,523,095	33,664,366
271,571,304	305,927,296	278,843,852	—	—	—	18,901,328	26,343,126	4,987,537
81,798,540	76,195,162	64,849,488	3,266	5,451	3,556	43,330,610	38,201,812	26,323,162
2,339,654	2,097,643	1,215,256	—	—	—	1,734,724	2,021,988	823,653
35,207,007	37,180,216	30,231,758	89,013	112,159	—	22,806,142	26,968,674	18,355,376
13,006,148	12,962,437	10,826,578	—	—	—	12,871,490	17,791,999	10,664,437
2,098,418	2,042,565	1,944,073	8,664	7,350	9,936	2,076,941	2,017,741	1,921,336
2,890,954	2,833,821	2,833,063	— 404	—	775	2,511,979	2,511,979	2,618,079
15,058,317	16,170,995	11,478,458	28,285	189,771	11,237	14,103,675	15,823,988	11,147,190
423,970,342	455,408,135	402,222,526	128,228	315,135	80,941	118,378,244	126,681,307	76,840,770

15.—Principal Imports into Canada for Consumption from All Countries, the United Kingdom and the United States, 1956-58—continued

Item	All Countries			United Kingdom			United States		
	1956	1957	1958	1956	1957	1958	1956	1957	1958
VII. Non-metallic Minerals and Their Products (except chemicals) —concluded									
Stone—									
Diamond dust and other abrasives.....	18,254,510	18,333,245	12,565,584	2,019,486	1,448,838	1,332,468	13,683,862	14,797,547	10,675,315
Building and paving stone.....	1,251,894	1,477,318	1,405,056	10,714	1,184	—	550,905	1,012,448	955,204
Lime, plaster and cement.....	10,758,729	4,256,279	3,561,256	1,269,258	479,589	312,011	4,066,247	2,586,857	2,176,857
Phosphate rock.....	5,185,597	5,897,784	6,854,243	—	—	—	4,863,774	5,840,223	6,672,681
Silica sand.....	2,597,302	2,407,633	2,114,555	—	—	—	2,594,032	2,551,770	2,113,949
Roofing granules.....	1,961,971	1,746,903	2,171,210	—	—	—	1,961,971	1,746,903	2,171,210
Stone, and manufactures of, <i>n.o.p.</i>	6,771,241	5,592,933	5,976,353	264,523	197,862	248,394	4,251,195	3,888,986	3,946,956
Totals, Stone.....	46,781,244	39,712,115	34,678,257	3,563,981	2,127,483	1,893,440	32,272,886	32,496,871	28,712,172
Diamonds, unset.....	8,920,940	8,703,655	9,169,146	1,139,093	1,163,849	1,283,776	1,196,686	1,202,290	1,468,352
Gas for heating, cooking or illuminating, imported by pipeline.....	3,479,610	7,239,684	7,774,932	—	—	—	3,479,610	7,239,684	7,774,932
Salt.....	1,605,746	1,649,217	1,502,998	36,115	33,312	37,677	1,244,033	1,255,761	1,177,641
Sulphur and brimstone.....	11,857,556	9,752,368	8,324,191	36,138	—	—	11,831,667	9,752,368	8,296,929
Other non-metallic minerals and manufactures of.....	12,850,234	13,421,279	11,964,135	455,046	899,531	849,209	10,697,489	10,722,768	9,516,347
Totals, Non-metallic Minerals and Their Products.....	765,970,972	777,661,107	682,853,890	34,011,962	30,050,984	30,113,095	390,618,410	391,324,449	296,484,733
VIII. Chemicals and Allied Products									
Acids.....	7,340,309	6,910,441	7,697,219	1,059,525	924,215	987,992	5,438,936	5,297,947	5,612,639
Alcohols, industrial.....	1,402,718	1,355,829	1,284,180	1,200	609	—	1,395,620	1,381,276	1,279,635
Drugs, medicinal and pharmaceutical preparations.....	26,121,052	28,391,509	29,248,084	2,248,959	2,396,884	2,525,166	22,000,424	23,453,328	24,139,729
Dyeing and Tanning Materials—									
Coal-tar products.....	8,704,464	8,764,314	9,295,466	1,297,982	1,243,621	1,266,521	5,275,983	5,376,599	5,387,288
Dyeing and tanning materials, <i>n.o.p.</i>	3,836,318	3,253,837	2,851,564	472,756	456,023	245,628	1,590,780	1,578,760	1,389,286
Totals, Dyeing and Tanning Materials.....	12,540,782	12,018,151	12,147,030	1,770,718	1,698,644	1,512,149	6,866,763	6,955,359	6,776,574
Explosives.....	1,372,258	1,485,016	2,190,501	170,384	122,790	103,953	1,046,553	1,195,213	1,912,250
Fertilizers.....	13,258,248	13,627,258	12,976,208	34,706	37,804	37,877	11,460,584	11,521,179	11,083,993

PRINCIPAL IMPORTS INTO CANADA

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Pigments, Paints and Varnishes— Chemical and mineral earth pigments..... Paints and varnishes, <i>n.o.p.</i>	18,346,601 4,754,469	15,581,706 5,745,587	4,880,841 472,576	5,643,542 430,230	5,616,924 476,594	15,357,545 4,443,168	12,464,399 4,251,111	9,663,905 5,197,958
Totals, Pigments, Paints and Varnishes..	23,101,070	21,327,293	5,333,417	6,073,772	6,083,518	19,800,713	16,715,510	14,891,453
Perfumery, cosmetics and toilet preparations. Soap.....	1,809,188 1,951,342	2,045,564 2,670,187	161,358 165,908	141,390 140,403	192,589 170,909	1,068,137 1,737,808	1,060,432 2,081,239	1,256,215 2,442,340
Inorganic Chemicals, <i>n.o.p.</i> — Ammonia and its compounds..... Compounds of bismuth and lead..... Compounds of bromine, chlorine and iodine..... Compounds of calcium..... Soda and sodium compounds, <i>n.o.p.</i> Other inorganic chemicals, <i>n.o.p.</i>	2,525,969 125,673 2,109,682 2,170,569 17,730,955 4,943,690	2,525,969 1,078,149 96,961 1,414,077 14,006,258 4,255,838	58,839 84,344 2,786 126,647 2,993,064 1,153,830	81,908 66,832 1,056 110,273 2,642,039 805,105	80,724 54,154 2,937 121,869 2,657,678 627,814	1,835,264 40,634 2,081,413 1,971,959 14,168,711 3,425,824	2,400,606 26,759 1,981,976 2,465,667 12,888,875 4,601,841	1,853,725 35,983 1,370,020 1,461,634 10,776,523 3,173,109
Totals, Inorganic Chemicals, <i>n.o.p.</i>	29,623,591	23,942,214	4,331,490	3,710,213	3,546,176	23,523,805	24,384,804	19,171,004
Chemicals and Allied Products, <i>n.o.p.</i> — Glycerine..... Ink, printing, writing and rotogravure..... Butadiene..... Chemicals for synthetic resins..... Plastics and products..... Other chemicals and allied products, <i>n.o.p.</i>	1,413,285 1,384,353 1,575,762 6,434,551 9,828,605 66,030,187 84,306,765	1,433,158 1,627,779 3,828,265 11,559,710 80,375,201 76,006,230	108,113 17,102 2,046,784 5,089,296	154,743 265,951 17,608 2,370,802 5,111,759	215,860 89,878 2,477,082 5,600,662	1,413,285 1,141,880 5,206,447 8,767,061 62,943,711 76,463,642	1,266,749 1,255,637 3,828,265 9,618,331 66,981,020 73,364,050	1,259,733 1,304,755 3,828,265 10,274,101 75,295,274 66,421,463
Totals, Chemicals and Allied Products <i>n.o.p.</i>	168,259,642	174,830,343	7,361,385	7,920,923	8,383,482	156,026,026	153,920,338	158,383,571
Totals, Chemicals and Allied Products	293,820,627	290,357,823	22,639,050	23,167,647	23,552,811	250,365,269	252,946,625	246,950,403
IX. Miscellaneous Commodities								
Amusement and Sporting Goods, <i>n.o.p.</i> — Bagatelle and other game tables and boards Dolls and toys..... Films..... Sportsmen's fishing rods and tackle, <i>n.o.p.</i> Other amusement and sporting goods, <i>n.o.p.</i>	1,119,384 13,141,018 12,109,210 4,069,711 701,000	934,431 11,756,549 15,498,700 4,484,484 820,521	102,505 1,769,508 1,141,433 206,651 159,036	101,391 2,038,914 2,030,262 259,628 154,934	109,918 2,043,870 1,885,767 246,512 190,679	1,000,234 5,393,928 2,858,329 3,227,592 486,683	817,957 5,313,556 11,716,808 3,227,592 598,752	1,023,075 5,655,828 12,945,324 3,587,225 884,155
Totals, Amusement and Sporting Goods, <i>n.o.p.</i>	29,170,323	33,494,685	3,439,133	4,585,129	4,490,545	19,494,132	21,674,600	24,065,007
Brushes of all kinds..... Packages and containers, not including con- tents.....	1,900,569 10,743,832	2,044,287 11,861,735	604,604 4,027,009	706,651 4,150,817	762,590 3,767,708	961,384 2,382,494	979,574 2,677,973	1,074,486 2,345,002
Household and Personal Equipment, <i>n.o.p.</i> — Boots, shoes and slippers (except rubber and leather)..... Buttons of all kinds..... Cases, boxes and writing desks, fancy.....	1,302,941 1,633,882 2,702,779	1,264,862 1,612,226 2,414,186	230,907 53,206 356,505	230,822 43,892 263,049	231,754 43,193 225,216	418,643 1,218,132 1,871,537	466,776 1,161,066 1,660,712	495,154 1,087,188 1,668,343

15.—Principal Imports into Canada for Consumption from All Countries, the United Kingdom and the United States, 1956-58—concluded

Item	All Countries			United Kingdom			United States		
	1956	1957	1958	1956	1957	1958	1956	1957	1958
IX. Miscellaneous Commodities—concluded									
Household and Personal Equipment, <i>n.o.p.</i> —concluded									
Ear-telephone sets and appliances for deaf persons, and parts; electronic ear-training apparatus and parts thereof, designed for use by, or for the training of, the deaf	2 117 621	2 301 175	2 838 380	6 690	6 119	38 351	2 098 216	2 281 325	2 765 851
Jewellery, <i>n.o.p.</i>	5 802 952	5 329 620	5 432 556	237 450	211 136	235 161	3 449 644	2 880 095	2 729 804
Pocketbooks, portfolios, purses, reticules, card cases, fly books, and musical instrument cases, and parts	4 737 545	5 290 156	6 212 902	662 863	742 607	803 841	2 943 808	3 200 153	3 649 610
Refrigerators, electric and other, and parts	44 622 419	35 112 753	34 794 960	916 801	1 110 339	1 940 502	43 682 719	33 951 481	32 797 606
Spectacle and eye-glass frames, and parts	3 386 976	3 520 150	3 483 537	19 071	11 298	15 508	3 090 164	3 209 022	3 147 394
Trunks, valises, hat boxes, carpet bags and tool bags	1 863 166	1 728 031	2 084 742	317 101	335 796	376 578	1 416 776	1 224 436	1 519 980
Other household and personal equipment, <i>n.o.p.</i>	3 698 696	3 621 375	4 301 392	836 044	707 134	927 742	1 884 435	1 890 668	2 050 568
Totals, Household and Personal Equipment, <i>n.o.p.</i>	71 888 977	62 194 543	64 311 855	3 636 638	3 662 192	4 837 846	62 075 094	51 925 734	51 851 298
Musical instruments and parts	8 850 759	10 392 328	10 283 825	819 510	770 652	956 935	6 337 070	7 801 408	7 416 650
Scientific and Educational Equipment—									
Cameras and parts	6 393 538	7 562 446	8 450 583	33 531	40 329	27 707	3 400 900	3 928 585	4 681 063
Surgical and dental instruments	10 660 582	11 665 442	14 156 745	478 685	531 180	650 941	9 030 708	9 562 895	12 003 398
Optical, philosophical and mathematical instruments, <i>n.o.p.</i> , and parts	5 458 413	4 648 362	4 912 255	500 086	446 988	524 833	3 756 107	2 968 940	2 883 487
Other scientific and educational equipment, <i>n.o.p.</i>	21 269 164	22 707 015	25 329 730	1 239 133	1 068 778	1 740 000	18 589 511	19 535 487	21 685 888
Totals, Scientific and Educational Equipment	43 781 697	46 573 265	52 849 313	2 251 435	2 087 275	2 943 181	34 777 226	36 055 907	41 253 836
Ships and vessels	3 294 955	4 182 227	4 975 315	286 970	1 540 017	1 459 377	2 414 398	2 472 431	2 567 532
Vehicles, <i>n.o.p.</i> (see also Iron)—									
Aircraft and parts, excluding engines and parts	91 303 918	93 690 529	94 836 247	6 810 659	14 936 633	21 153 101	84 183 674	78 573 360	73 351 244
Other vehicles, <i>n.o.p.</i>	15 621 215	13 826 986	12 252 008	138 007	141 990	248 181	15 432 711	13 636 151	11 904 107
Totals, Vehicles, <i>n.o.p.</i>	106 925 133	107 517 515	107 088 255	6 948 759	15 078 623	21 401 282	99 616 385	92 209 520	85 255 351
Paintings, statues and other works of art	5 633 307	3 955 789	3 551 476	1 754 010	969 719	812 308	2 481 269	1 704 836	1 274 681
Articles for the Governor General, British or foreign representatives	1 257 846	1 387 251	1 232 342	126 011	92 099	133 511	722 315	680 977	486 878

Goods returned within five years after having been exported.....	10,052,436	9,162,092	11,987,049	339,234	334,709	506,607	9,179,949	8,247,990	10,630,303
Arms and other goods for British Commonwealth or NATO countries.....	49,303,504	28,434,819	27,102,254	1,932,143	1,705,758	1,037,856	45,232,100	24,003,552	24,307,767
Incidental purchases of Canadians returning from other countries.....	1,976,744	2,129,157	1,741,523	18,143	19,515	16,560	1,948,695	2,006,111	1,700,625
Biological products, animal or vegetable, <i>n.o.p.</i> , for parental administration in the diagnosis or treatment of diseases.....	75,205,412	77,403,400	78,946,512	1,589,582	1,939,742	2,477,525	72,624,082	74,050,895	73,902,273
Cartridges, metallic and other, and ammunition, <i>n.o.p.</i>	1,573,228	1,922,245	2,158,433	30,179	32,085	49,831	1,533,501	1,890,108	2,090,298
Pens, penholders, pencils and rulers.....	4,178,887	3,432,650	2,081,004	2,712,701	809,668	333,021	1,428,236	2,327,371	1,569,656
Precious stones, and imitations of (except diamonds).....	2,612,686	3,072,474	3,490,796	70,625	88,227	132,096	2,340,984	2,805,013	3,041,242
Settlers' effects.....	1,914,871	1,682,018	2,135,507	201,401	174,470	291,173	548,017	473,993	523,723
Shipments under \$50 in value.....	31,830,684	41,832,098	33,131,901	4,390,747	10,668,172	4,340,534	18,692,171	18,921,790	20,285,486
Wax, vegetable and mineral, <i>n.o.p.</i> , and wax and manufactures of, <i>n.o.p.</i>	49,371,409	51,982,276	53,582,566	1,238,394	1,378,427	1,385,830	47,141,345	49,370,268	50,654,500
All other articles imported.....	2,308,594	2,243,095	2,176,971	12,190	11,778	6,269	534,560	735,019	1,262,804
.....	18,692,836	17,755,757	16,708,112	783,578	874,548	1,110,063	14,973,208	13,999,193	12,556,929
Totals, Miscellaneous Commodities.....	532,483,659	524,655,706	530,203,895	37,332,923	51,790,363	53,253,249	447,444,515	417,694,293	420,146,917
Grand Totals, Imports.....	5,765,445,903	5,623,410,459	5,192,350,990	484,678,970	521,957,699	526,650,380	4,161,666,638	3,998,549,364	3,572,379,341

16.—Principal Exports of Canadian Produce from Canada to All Countries, the United Kingdom and the United States, 1956-58

NOTE.—Throughout this table certain revisions have been made in 1956 and 1957 figures since they were published in the 1959 Year Book. These changes result mainly from revisions in nomenclature or groupings.

Item	All Countries			United Kingdom			United States		
	1956	1957	1958	1956	1957	1958	1956	1957	1958
I. Agricultural and Vegetable Products (except chemicals, fibres and wood)									
A. Mainly Food									
Fruits—									
Apples, fresh.....	6,635,250	6,170,088	8,111,025	2,254,828	2,089,580	2,535,424	3,983,980	2,814,349	3,041,700
Berries, fresh.....	2,797,808	1,903,174	1,984,962	—	—	—	2,597,329	1,902,073	1,983,562
Fresh nuts, <i>n.o.p.</i>	531,595	456,339	1,118,929	8,859	10,758	3,527	512,113	444,622	1,111,323
Canned or preserved fruits.....	1,348,513	898,143	1,788,596	490,424	24,430	567,874	576,051	582,461	582,461
Fruit juices, fruit syrups, and dried fruits.....	478,027	459,284	430,445	—	127	—	374,183	229,558	177,938
Totals, Fruits.....	11,791,133	9,887,028	13,433,957	2,754,111	2,124,904	3,106,825	8,187,139	5,966,653	6,806,984
Vegetables—									
Potatoes (except seed potatoes).....	3,599,311	1,941,512	4,738,187	—	—	—	1,909,034	502,242	2,912,428
Fresh vegetables, <i>n.o.p.</i>	3,062,496	3,663,836	3,701,129	—	—	—	2,876,369	3,434,438	3,498,340
Canned vegetables, including soups of all kinds.....	1,871,058	1,575,117	1,743,115	487,304	584,081	517,529	271,160	26,352	40,465
Pickles, sauces, catsups, and dried vegetables.....	293,954	228,455	263,035	176,401	138,147	165,718	54,081	19,282	34,455
Totals, Vegetables.....	8,856,849	7,408,920	10,445,466	663,705	672,228	683,247	5,110,644	3,982,314	6,485,688

16.—Principal Exports of Canadian Produce from Canada to All Countries, the United Kingdom and the United States, 1956-58—continued

Item	All Countries			United Kingdom			United States		
	1956	1957	1958	1956	1957	1958	1956	1957	1958
I. Agricultural and Vegetable Products (except chemicals, fibres and wood)— <i>concl.</i>									
Grains and Farinaceous Products—									
Wheat.....	513,080,944	380,414,579	446,078,067	176,850,499	129,602,375	150,702,764	17,959,376	16,147,396	15,226,669
Grain, other (including rice).....	127,736,219	101,847,063	108,581,602	43,740,774	25,697,685	57,748,625	50,758,826	48,678,616	29,666,712
Flour of wheat.....	71,549,019	61,174,966	69,398,340	21,044,765	20,372,945	22,854,457	1,896,318	2,395,764	2,344,715
Bran, meal and other milled products, <i>n.o.p.</i>	6,472,188	4,718,341	5,172,271	3,245,319	920,183	1,827,223	2,305,200	2,427,929	1,818,669
Bread, biscuits, cereals and other bakery products and prepared foods.....	3,483,765	3,850,975	3,099,704	30,237	27,796	22,068	2,514,909	3,050,465	2,317,660
Malt.....	8,538,722	9,750,860	10,684,451	—	285	—	3,588,106	4,614,981	5,263,933
Totals, Grains and Farinaceous Products.....	730,860,857	561,757,684	643,014,485	244,911,594	176,621,269	233,155,137	79,022,735	77,315,151	56,578,358
Sugar and Its Products—									
Maple syrup.....	1,798,562	1,855,025	1,636,818	911	42,408	8,238	1,795,805	1,809,148	1,625,014
Maple sugar.....	3,748,236	2,494,428	2,511,946	—	—	—	3,745,276	2,458,128	2,471,636
Sugar and sugar products, <i>n.o.p.</i>	686,834	689,979	860,905	5,178	26,912	27,946	474,239	377,093	467,470
Totals, Sugar and Its Products.....	6,233,632	5,039,432	5,009,669	6,089	69,320	36,184	6,015,320	4,644,369	4,564,120
Coffee, and imitations of.....									
Tea.....	1,417,002	234,544	30,620	507,944	—	—	610	800	1,027
Vegetable food products, other.....	1,471,839	809,857	823,012	—	123	2,165	470,630	809,450	818,668
Totals, A. MAINLY FOOD.....	1,232,804	1,440,849	1,363,720	33,201	28,713	11,712	246,945	433,111	625,199
	760,863,916	586,578,314	674,120,929	248,876,644	179,516,557	236,945,270	99,054,023	93,151,848	75,970,044
B. OTHER THAN FOOD									
Alc, beer and porter.....	3,585,882	4,052,544	4,068,151	—	941	2,640	3,318,092	3,881,930	3,929,650
Whisky.....	68,660,235	66,993,691	70,276,313	628,553	576,318	516,312	62,467,350	60,610,206	64,360,025
Oil cake and oil cake meal.....	20,890,508	17,667,780	6,037,567	20,375,486	16,563,694	5,990,005	360,292	360,292	664,384
Oil.....	8,529,050	7,085,991	5,030,338	3,780,828	4,851,955	3,424,469	750,771	712,454	202,465
Rubber, and manufactures of.....	9,337,355	9,087,824	7,884,935	286,668	147,898	188,364	3,990,772	3,879,237	3,916,397
Flaxseed.....	43,628,868	64,723,234	45,065,867	19,777,082	21,614,614	18,249,666	6,404	19,652	3,102,122
Seed potatoes.....	5,690,718	3,674,194	5,152,031	—	—	—	3,835,703	2,248,930	3,272,191
Seeds, <i>n.o.p.</i>	19,445,040	25,370,547	25,567,181	1,300,895	1,704,024	2,892,219	8,609,894	6,647,527	6,926,642
Seedlings, <i>n.o.p.</i>	17,319,638	20,904,836	18,554,804	12,824,478	16,373,852	14,366,778	3,998	49,217	70,061
Tobacco, unmanufactured.....	17,354,440	2,336,488	339,557	70,168	65,778	60,901	39,040	49,217	6,066,393
Tobacco, manufactured.....	6,068,845	6,668,723	7,507,463	296,699	183,460	248,724	6,565,857	6,565,857	7,505,873
Peat moss and other mosses.....	8,007,224	8,329,040	7,980,092	—	—	—	7,394,197	7,394,197	6,835,836
Fodders, <i>n.o.p.</i>	3,094,351	4,197,860	3,384,235	—	1,073	3,022,122	3,022,122	4,120,707	3,305,587
Hay.....	2,487,512	3,208,068	3,459,967	512,102	368,228	280,257	1,527,472	2,031,376	2,571,315
Vegetable products, other, not food.....	—	—	—	—	—	—	—	—	—
Totals, B. OTHER THAN FOOD.....	214,099,666	245,000,820	211,218,201	59,853,959	62,511,835	46,238,577	100,280,448	98,563,372	103,571,808
Totals, Agricultural and Vegetable Products.....	974,963,582	831,579,134	885,239,130	308,730,603	242,028,392	283,223,847	199,334,471	191,715,220	179,541,552

II. Animals and Animal Products (except chemicals and fibres)

Animals, Living—

Cattle, swine, sheep and poultry, pure bred, for improvement of stock.....	6,936,125	6,162,799	8,387,420	1,000	12,200	87,100	4,891,581	5,137,163	7,746,645
Cattle, <i>n.o.p.</i>	4,772,754	45,119,631	88,542,205	—	—	300	4,613,947	44,963,035	88,390,713
Horses.....	698,428	1,380,600	2,021,296	6,000	—	—	637,358	1,364,241	2,005,831
Other animals, living.....	698,428	653,542	1,426,886	14,324	22,776	186,996	402,772	503,869	1,140,561
Totals, Animals, Living.....	12,947,734	53,316,372	100,877,807	21,324	34,976	274,396	10,595,668	52,028,348	98,286,750

Fish and Fishery Products, *n.o.p.*—

Fish, fresh and frozen.....	59,594,357	63,186,480	70,897,985	—	110	10,600	58,695,581	62,369,836	69,652,100
Fish, salted, dried, pickled and smoked.....	27,836,986	24,512,513	22,699,637	75	—	—	5,745,023	5,814,043	6,997,487
Fish, canned or preserved, <i>n.o.p.</i>	17,449,160	33,367,643	33,705,534	7,216,381	5,923,751	22,828,988	2,123,003	19,635,241	3,371,999
Molluscs and crustaceans.....	20,554,159	20,413,412	19,220,092	356,570	359,381	309,728	19,798,267	18,427,798	18,427,798
Other fishery products, <i>n.o.p.</i>	9,494,960	8,354,024	5,869,917	486,366	930,165	1,147,661	8,228,799	6,655,190	4,396,036
Totals, Fish and Fishery Products, <i>n.o.p.</i>.....	129,928,322	130,334,072	152,393,165	8,059,392	7,213,407	24,296,977	94,590,673	95,306,787	101,815,418

Fur skins, undressed.

Fur skins, dressed, and manufactures of fur.....	25,893,105	25,943,970	23,321,601	4,224,502	4,310,953	3,981,707	20,831,011	20,457,667	18,506,419
Hair and bristles.....	1,839,794	2,078,763	1,667,415	12,888	52,401	254,849	1,043,868	937,701	781,415
Hides and skins, raw (except fur skins).....	1,065,717	12,778,780	640,653	202,515	125,513	104,280	791,006	559,742	432,628
Leather, unmanufactured.....	10,225,319	12,130,260	12,962,979	1,757,021	2,091,197	2,465,359	3,691,891	3,264,037	4,363,221
Leather, manufactures of.....	8,883,147	9,789,365	10,455,442	1,511,669	1,618,196	1,525,343	4,496,568	4,698,361	5,282,456
	2,446,517	2,068,391	1,788,077	228,772	156,081	49,023	1,592,703	1,149,953	1,065,829

Meats—

Fresh, chilled and frozen.....	16,472,938	23,920,053	39,807,238	2,568	4,574	—	15,716,353	23,452,740	39,391,356
Bacon and hams, shoulders and sides, cured or smoked.....	5,663,090	4,137,740	4,439,233	63,171	65,551	26,295	4,757,405	3,351,674	3,715,880
Meats, other, and preparations of meats.....	14,899,029	9,788,281	11,529,394	76,408	106,604	90,679	11,068,125	6,013,368	6,753,540
Totals, Meats.....	37,035,057	37,846,074	55,766,865	142,147	175,729	116,374	31,541,883	32,817,782	49,860,776

Casesin.

Casesin.....	791,795	320,582	222,217	66,808	—	—	719,947	320,582	222,217
Cheese.....	4,178,143	3,078,527	5,002,193	3,677,059	2,698,881	4,629,422	282,914	215,650	275,585
Milk, processed.....	8,951,786	7,570,725	11,191,385	—	—	—	85,536	20,891	7,179
Milk preparations, <i>n.o.p.</i>	574,195	303,066	208,877	—	—	—	—	13,265	—

Oils, fish, seal and whale.

Animal oils, fats, greases and wax, <i>n.o.p.</i>	2,232,033	935,412	1,318,309	3,893	84,822	514,926	1,076,628	787,298	465,362
Eggs.....	4,117,944	5,010,146	4,719,169	1,382,733	2,094,662	868,541	183,838	415,924	248,124
Sausage casings.....	1,909,882	3,416,663	6,280,200	6,000	6,000	6,300	878,625	363,968	803,841
Horsemeat.....	2,201,574	2,471,946	3,009,538	298,205	341,642	560,676	1,300,925	1,410,789	1,472,387
Horsemeat, for human consumption, and animal food, prepared.....	2,410,214	3,067,301	3,980,487	—	—	—	2,388,896	3,018,501	3,898,361
Animal products, <i>n.o.p.</i>	2,612,028	1,653,861	1,938,986	80,173	14,594	71,564	1,375,691	1,383,810	1,697,644
Totals, Animals and Animal Products.....	280,249,306	302,051,437	397,695,395	21,665,101	20,990,927	39,717,337	177,468,261	219,651,056	290,516,519

16.—Principal Exports of Canadian Produce from Canada to All Countries, the United Kingdom and the United States, 1956-58—continued

Item	All Countries			United Kingdom			United States		
	1956	1957	1958	1956	1957	1958	1956	1957	1958
III. Fibres, Textiles and Textile Products									
Cotton—									
Cotton rags and waste.....	1,146,428	1,076,555	545,427	61,651	21,649	19,816	599,243	521,036	332,459
Fabrics.....	802,263	1,335,043	1,249,010	11,022	9,030	25,629	28,175	28,175	19,335
Clothing (including socks and stockings).....	842,105	833,189	744,205	121,942	89,134	93,556	265,440	242,625	162,169
Cotton manufactures, <i>n.o.p.</i>	655,288	657,104	470,151	1,852	1,387	14,331	119,140	132,226	96,903
Totals, Cotton.....	3,536,064	3,971,891	3,008,793	196,467	121,200	153,332	1,041,002	924,062	610,866
Flax, Hemp and Jute—									
Waste bagging and cloth of jute.....	855,612	652,983	255,111	—	—	—	855,471	652,983	255,111
Flax, hemp and jute products, other.....	199,255	199,950	206,879	865	—	124	191,130	186,930	188,283
Totals, Flax, Hemp and Jute.....	1,054,867	852,933	461,990	865	—	124	1,046,601	839,913	443,394
Wool—									
Raw wool (includes noils and tops).....	1,742,233	2,120,401	1,647,617	1,050,133	1,343,280	923,614	600,665	742,039	719,624
Wool rags and waste.....	2,083,233	2,495,613	1,141,454	27,668	163,855	29,401	912,076	875,694	404,969
Wool fabrics.....	84,471	39,202	42,687	5,103	4,311	791	78,230	27,782	39,647
Clothing (except socks and stockings).....	1,486,340	1,098,836	1,110,437	2,094	6,184	4,577	1,284,795	868,474	930,747
Wool manufactures, <i>n.o.p.</i>	115,095	135,369	107,075	200	7,712	500	107,681	89,513	99,627
Totals, Wool.....	5,511,392	5,889,511	4,049,270	1,085,198	1,825,342	958,883	2,983,347	2,633,502	2,194,614
Synthetic Fibre—									
Thread and yarn.....	1,874,664	5,777,830	3,222,890	40,482	2,414,823	1,228,334	514,946	236,033	21,216
Fabrics.....	1,168,044	6,777,491	3,563,276	54,524	88,500	103,135	142,735	95,581	63,224
Clothing (except socks and stockings).....	206,634	291,936	280,771	12,830	32,013	48,727	18,746	11,517	13,786
Synthetic fibre manufactures, <i>n.o.p.</i>	343,609	754,694	375,616	48	1,286	—	33,023	219,325	28,412
Totals, Synthetic Fibre.....	3,682,951	7,601,951	4,442,553	107,884	2,536,631	1,379,196	709,450	562,456	126,638
Rags and waste, <i>n.o.p.</i>.....	887,337	1,569,010	1,342,401	9,488	25,501	5,235	611,218	1,147,664	878,640
Cordage, rope and twine, <i>n.o.p.</i>	4,075,217	4,097,095	4,511,419	—	—	—	3,243,049	3,190,770	3,213,469
Binder twine.....	1,143,513	888,533	746,512	—	—	—	1,143,513	888,533	746,512
Felt manufactures.....	799,560	968,769	1,041,737	37,442	12,196	34,955	10,066	7,230	11,342
Clothing, <i>n.o.p.</i> (including socks and stockings, <i>n.o.p.</i>).....	1,191,476	759,905	501,673	413,661	122,055	2,198	338,655	209,877	172,376
Oilcloth and linoleum.....	1,216,692	220,890	241,252	28,880	37,164	35,668	2,028	238	5,177
Textile products, <i>n.o.p.</i>	469,379	351,560	312,703	—	—	—	126,222	97,506	84,003
Totals, Fibres, Textiles and Textile Products.....	22,568,238	27,162,058	20,660,393	1,879,885	4,380,989	2,566,621	11,304,171	10,390,751	8,487,021

PRINCIPAL EXPORTS OF CANADIAN PRODUCE

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IV. Wood, Wood Products and Paper

Wood, Unmanufactured or Partially Manufactured—

Logs.....	3,197,705	3,068,492	2,274,201	627,477	825,444	683,061	2,260,242	1,820,319	1,169,013
Flt props.....	2,182,417	2,389,143	1,649,906	1,932,070	2,381,651	1,232,790	363	—	—
Poles.....	4,708,417	5,502,217	3,922,492	2,135	2,223,653	—	4,777,129	5,288,422	3,890,485
Railroad ties.....	1,791,069	2,764,483	1,300,340	1,695,795	1,695,795	2,400,072	1,408,509	478,832	268,532
Bullets and blocks.....	1,955,017	1,774,686	79,951	79,951	189,399	1,803,787	1,803,787	1,567,949	1,543,960
Planks and boards.....	326,445,303	281,680,951	292,013,254	40,103,498	41,516,978	35,465,666	252,593,642	204,975,822	227,435,687
Timber, square.....	1,653,571	1,609,080	1,586,949	794,178	464,361	421,515	133,986	135,700	348,198
Laths.....	1,053,465	1,008,352	1,109,094	—	—	—	1,051,229	1,007,229	1,108,785
Pickets.....	1,026,937	922,448	770,545	—	—	—	1,026,937	922,448	770,545
Shingles.....	24,546,035	19,383,231	19,828,194	308,617	297,009	182,842	23,856,907	18,677,817	19,381,413
Veneers and plywoods.....	29,020,281	29,335,667	22,523,009	2,980,221	3,866,270	4,638,350	23,619,223	17,940,115	17,601,831
Christmas trees.....	6,122,608	6,365,227	5,500,016	—	—	—	6,085,985	6,326,706	5,458,940
Pulpwood.....	49,794,173	48,438,767	34,654,633	3,727,177	3,799,206	2,813,217	41,276,505	39,467,652	28,762,243
Spoolwood.....	1,495,863	1,428,378	1,308,226	1,069,890	1,109,046	1,131,443	411,461	319,552	176,763
Wood, unmanufactured, n.o.p.....	1,362,538	1,276,817	1,387,008	2,250	—	—	1,245,501	1,080,796	1,087,894
Totals, Wood, Unmanufactured or Partially Manufactured.....	456,365,563	398,801,722	392,069,292	52,927,804	56,118,482	49,251,155	362,551,386	300,029,339	310,022,609

Wood, Manufactured—

Wood pulp.....	304,535,497	292,406,102	285,448,649	29,762,920	28,662,202	24,666,398	245,080,531	235,258,142	239,874,495
Doors.....	1,153,356	666,891	340,142	856	55	—	1,138,785	668,637	328,834
Match splints.....	1,141,179	1,478,540	1,351,925	1,018,950	1,385,433	1,217,094	3,613,180	4,597,566	3,293,071
Manufactures of wood, n.o.p.....	5,450,552	6,638,571	4,809,423	532,270	507,867	—	249,832,496	240,514,345	243,496,400
Totals, Wood, Manufactured.....	312,281,584	301,186,394	291,950,139	31,314,996	30,535,557	26,320,415	249,832,496	240,514,345	243,496,400

Paper—

Pulpboard, wallboard and paperboard.....	14,020,374	15,589,646	12,958,360	7,425,135	8,749,355	7,067,421	6,058,594	6,386,182	5,357,282
Book paper.....	7,137,201	7,227,440	7,769,745	41,551,218	288,842	316,518	5,148,986	5,244,638	6,066,959
Newsprint paper.....	708,384,822	715,480,761	690,209,468	41,551,514	44,009,073	46,476,034	615,941,551	610,230,208	590,167,442
Wrapping paper.....	2,719,771	3,461,478	5,218,598	684,954	1,249,456	2,975,157	1,119,264	743,622	946,330
Newsprint paper, tintulated or beater stock, and waste paper.....	2,836,158	2,743,563	2,692,563	429,254	291,200	356,324	2,390,757	2,304,518	2,038,997
Paper and manufactures of, n.o.p.....	6,193,619	6,641,458	5,910,010	533,649	816,749	386,649	2,144,976	2,432,459	2,087,770
Totals, Paper.....	741,291,945	751,153,346	724,668,744	50,871,724	55,404,675	57,578,103	632,804,130	627,401,618	606,360,780

Books, newspapers and other printed and lithographed matter.....

	4,518,509	4,983,393	4,270,765	216,350	251,224	253,211	3,729,685	3,957,935	3,299,726
Totals, Wood, Wood Products and Paper	1,514,457,601	1,456,124,855	1,413,988,940	135,330,874	142,309,935	133,402,864	1,248,917,697	1,171,903,237	1,163,179,515

16.—Principal Exports of Canadian Produce from Canada to All Countries, the United Kingdom and the United States, 1956-58—continued

Item	All Countries			United Kingdom			United States		
	1956	1957	1958	1956	1957	1958	1956	1957	1958
V. Iron and Its Products									
Iron ore.....	144,442,550	152,281,394	107,674,258	18,506,953	24,283,031	16,212,753	113,516,437	110,179,709	77,749,050
Ferro-alloys.....	21,176,727	18,577,929	6,711,248	5,733,431	5,127,456	2,982,221	14,128,850	11,732,309	3,313,254
Pigs, ingots, blooms and billets.....	30,428,618	42,226,294	24,278,163	1,074,791	1,156,726	62,915	16,398,880	12,788,079	11,164,502
Scrap iron.....	20,747,056	28,619,566	12,393,580	3,126,781	2,492,605	234,162	11,538,272	9,083,743	2,519,280
Castings and forgings.....	4,216,039	3,306,438	2,643,063	50	—	—	4,191,799	3,265,936	3,814,626
Rolling-mill products.....	25,718,617	33,042,540	31,833,449	5,104,249	5,253,353	2,253,206	3,956,092	2,992,923	3,048,119
Tubes, pipes and fittings.....	1,471,908	10,804,760	5,461,228	22,052	1,896	18,587	489,939	5,296,733	3,048,119
Engines and boilers and parts.....	30,911,717	38,364,509	34,635,751	205,092	299,648	368,842	10,295,068	19,133,296	17,854,045
Farm implements and machinery and parts.....	67,476,731	69,675,968	97,593,830	182,256	120,645	120,645	55,600,423	59,408,273	90,327,153
Hardware and cutlery.....	2,335,354	2,639,087	2,184,423	22,578	21,136	20,402	1,719,787	1,793,944	2,107,838
Machinery and parts (except agricultural).....	47,129,906	57,176,612	46,880,687	2,842,482	2,941,022	1,537,940	18,933,178	22,192,976	15,044,597
Tools.....	1,986,033	2,902,405	2,119,209	10,821	25,331	21,679	483,943	701,423	357,276
Automobiles, freight.....	5,491,076	4,485,265	3,529,828	—	—	—	13,376	118,437	8,995
Automobiles, passenger.....	17,026,504	22,628,603	19,382,131	193,829	375,728	417,933	56,809	82,943	121,263
Automobile parts.....	19,969,331	12,961,553	13,085,760	30,274	23,190	50,956	1,687,200	1,570,357	3,046,455
Vehicles and parts, <i>n.o.p.</i> (see also Miscellaneous Commodities).....	3,927,508	6,052,426	9,127,554	10,666	2,825	8,324	2,641,550	4,173,727	5,863,043
Guns, rifles and other firearms.....	6,627,095	74,127	293,185	9,521	4,321	13,417	6,154	11,341	6,077
Staves and lanterns of metal.....	1,013,759	1,151,012	1,063,709	3,310	1,813	13,417	2,021	1,747	2,151
Stoves and heating apparatus and parts.....	1,546,013	1,562,114	1,241,506	112,516	137,544	107,274	167,904	184,992	203,699
Other iron and steel, and manufactures of.....	11,186,200	10,302,657	9,300,255	248,771	191,684	171,718	4,788,962	4,737,413	3,698,907
Totals, Iron and Its Products.....	458,848,742	518,835,259	432,432,817	37,683,031	42,522,465	24,592,464	260,664,644	268,757,830	249,334,073
VI. Non-ferrous Metals and Their Products (except gold)									
Aluminum, and manufactures of.....	236,163,492	230,495,287	223,619,621	107,884,569	78,967,570	69,002,958	97,276,215	101,202,986	98,136,692
Brass, and manufactures of.....	6,574,129	5,083,038	4,265,241	159,059	58,397	100,113	2,452,757	1,683,862	2,145,602
Copper, and manufactures of.....	205,499,681	154,356,657	139,696,321	56,879,361	44,715,716	45,746,194	102,592,425	71,680,960	43,650,593
Lead, and manufactures of.....	35,046,254	29,431,868	26,125,492	13,437,728	9,372,192	7,510,111	12,681,428	12,847,921	13,200,286
Nickel.....	222,908,786	248,253,042	212,579,567	41,541,406	45,373,558	52,801,416	143,512,403	152,870,927	103,766,259
Precious metals, and manufactures of (except gold).....	55,558,202	45,828,929	34,741,259	20,570,661	17,646,814	15,033,947	33,432,221	26,642,095	18,137,898
Zinc, and manufactures of.....	74,232,108	65,118,122	55,509,578	15,790,440	19,566,871	13,738,984	54,737,167	41,678,491	36,781,121
Clocks and watches and parts.....	1,031,821	1,071,315	5,986,202	12,990	—	1,067	121,742	127,512	95,149
Electrical apparatus, <i>n.o.p.</i> (including radio and wireles).....	21,407,292	25,185,918	24,944,053	220,857	563,375	552,334	10,012,573	7,224,709	8,047,221
Printing materials.....	21,249,795	25,359,027	28,285,317	9,968	12,057	22,455	230,231	336,751	205,838
Uranium ores and concentrates.....	45,776,875	127,934,804	276,505,957	—	800	13,502,809	45,776,875	127,934,004	262,674,640
Ores, <i>n.o.p.</i>	13,280,201	16,039,156	6,276,745	411,400	508,002	957,542	6,878,005	9,515,964	3,386,056

Cobalt metal.....	3,546,025	4,102,211	1,872,049	87,900	7,690	3,546,025	3,956,046	1,811,671
Metallic scrap, gross and ashes, <i>n.o.p.</i>	6,087,269	4,934,118	2,054,516	38,225	136,002	2,695,030	3,834,383	1,635,186
Mercury.....	2,824,485	2,918,645	1,082,519	1,262,256	783,915	1,706,649	1,674,008	948,470
Magnesium.....	5,153,509	4,535,570	2,871,991	1,798,469	1,795,875	58,501	87,003	58,730
Selenium and salts.....	6,342,748	2,739,020	1,700,906	2,573,205	1,262,860	3,395,348	1,421,177	871,118
Other non-ferrous metals, and manufactures of	10,647,663	13,355,768	7,838,263	1,846,844	816,445	1,289,335	9,466,772	5,023,731
Totals, Non-ferrous Metals and Their Products.....	952,330,335	981,742,495	1,023,606,613	284,327,701	222,031,880	529,212,368	573,812,711	600,621,261
Asbestos, and manufactures of.....	103,638,075	108,938,506	91,521,978	10,036,464	8,009,188	7,859,913	52,314,087	48,719,064
Clay, and manufactures of.....	3,340,932	4,342,169	4,225,432	1,512	1,256	2,304,911	2,615,626	2,957,537
Coal.....	4,710,030	3,357,959	2,907,513	1,847,775	661,468	1,529,132	3,049,822	2,699,852
Coke.....	2,478,878	3,088,164	2,775,184	571,205	1,097,018	941,540	1,668,902	1,543,570
Coal products, <i>n.o.p.</i>	941,611	1,245,554	420,754	—	—	1,080,277	1,211,478	899,121
Glass, and manufactures of.....	1,305,740	1,155,635	1,328,105	430	2,645	111,167,333	140,544,981	75,832,083
Petroleum and its products.....	114,948,124	155,166,627	76,592,088	3,781,824	3,358,393	24,723,806	30,708,869	19,284,956
Abrazives.....	29,181,758	34,632,793	23,569,936	7,812,461	2,518	9,650,901	12,688,667	17,748,478
Lime, plaster and cement.....	9,736,675	12,834,065	7,812,461	4,139	332	6,894,669	6,416,160	5,226,937
Stone and its products, <i>n.o.p.</i>	5,318,354	9,845,169	6,935,128	34,704	803,799	423,843	55,542	10,673
Carbon and graphite electrodes.....	5,802,932	3,666,570	3,409,139	2,258,832	3,366,300	2,279,882	3,234,474	2,910,426
Salt.....	2,241,119	2,917,269	17,953,535	1	—	—	2,322,434	17,983,535
Gas exported by pipeline.....	2,286,830	3,241,119	17,953,535	—	—	—	10,946,664	5,703,756
Other non-metallic minerals, and manufactures of	15,350,723	13,430,257	7,932,768	677,362	57,223	544,448	277,509,873	191,842,740
Totals, Non-metallic Minerals and Their Products.....	299,240,662	357,287,051	250,351,290	19,215,238	16,279,159	231,386,684	277,509,873	191,842,740
VIII. Chemicals and Allied Products								
Acids.....	2,180,661	4,112,615	3,608,856	203,715	501,592	1,891,573	2,923,723	2,439,740
Alcohols, industrial.....	482,988	404,614	408,956	297,996	251,702	177,530	30,968	21,631
Drugs, medicinal and pharmaceutical preparations.....	5,349,076	6,834,761	9,560,103	33,078	20,377	1,686,587	1,342,000	978,759
Fertilizers.....	49,210,599	48,938,452	46,475,753	—	372	41,920,478	38,676,112	39,815,302
Paints and varnishes.....	2,058,817	1,768,474	3,011,432	1,658	6,119	1,251,842	944,569	1,269,307
Calcium compounds.....	2,025,369	7,203,438	893,866	653,753	1,781,287	1,161,120	3,182,982	1,673,438
Soda and sodium compounds.....	6,878,425	7,286,184	920,436	203,414	5,087,337	655,767	1,725,642	1,725,642
Cobalt oxides and cobalt salts.....	2,315,141	1,102,902	869,326	2,310,741	1,101,082	4,400	—	85,903
Inorganic chemicals, <i>n.o.p.</i>	1,296,225	769,470	717,017	1,132,315	3,744,880	1,281,228	751,115	702,492
Plastics and products.....	21,984,361	25,313,755	21,318,828	1,132,315	3,744,880	2,610,552	1,994,764	1,361,381
Polystyrene.....	6,174,136	6,845,502	7,405,673	56,368	10,392	2,817	2,817	5,468
Chemicals and allied products, <i>n.o.p.</i>	82,898,539	91,203,097	97,861,061	16,444,281	21,013,202	28,212,123	27,458,655	30,320,395
Totals, Chemicals and Allied Products.....	182,854,337	195,303,193	197,651,344	21,282,503	28,480,036	84,974,700	77,963,472	79,399,458

1 Included with "Other non-metallic minerals, and manufactures of".

16.—Principal Exports of Canadian Produce from Canada to All Countries, the United Kingdom and the United States, 1956-58—concluded

Item	All Countries			United Kingdom			United States		
	1956	1957	1958	1956	1957	1958	1956	1957	1958
	\$	\$	\$	\$	\$	\$	\$	\$	\$
IX. Miscellaneous Commodities									
Toys, dolls and other amusement and sporting goods, <i>n.o.p.</i>	1,349,352	1,812,223	2,383,245	41,056	19,051	20,324	980,915	1,428,591	1,977,316
Brushes.....	34,382	125,692	137,081	—	—	—	14,357	3,302	3,258
Containers, <i>n.o.p.</i>	3,730,965	2,608,523	2,456,466	11,138	15,926	13,633	646,285	412,165	414,729
Household and Personal Equipment, <i>n.o.p.</i> —									
Pens, pencils and parts.....	1,177,758	998,312	419,887	116,890	200,608	90,004	51,708	39,891	9,015
Power-operated refrigerators and parts.....	398,004	366,268	267,830	641	1,952	2,639	40,407	50,683	13,883
Other household and personal equipment, <i>n.o.p.</i>	799,617	931,773	831,132	61,630	52,718	31,685	155,551	203,467	170,743
Totals, Household and Personal Equipment, <i>n.o.p.</i>	2,375,379	2,296,353	1,518,849	179,161	255,278	124,328	247,666	294,041	194,541
Musical instruments and parts.....	655,539	827,692	900,027	1,626	3,179	3,766	506,094	780,136	870,094
Cameras, films and other philosophical and scientific apparatus.....	6,343,796	7,702,018	8,645,339	579,424	564,900	553,729	1,894,493	2,537,670	3,468,785
Ships and vessels and materials for ships.....	8,517,829	32,145,323	18,169,220	3,226	675,168	11,272,277	1,711,784	1,266,090	3,945,801
Aircraft and parts.....	49,544,807	39,910,214	108,112,763	156,526	257,698	255,050	28,611,138	16,137,495	14,977,006
Vehicles and parts, <i>n.o.p.</i> (see also Iron).....	178,626	151,231	203,792	—	—	—	164,687	124,012	184,932
Cartridges.....	226,257	126,658	438,476	168	—	63	18,305	18,650	17,217
Contractors' outfits and supplies.....	4,696,465	5,001,716	6,317,345	—	—	—	988,274	1,560,543	687,009
Electric energy.....	15,194,769	19,166,842	12,579,140	—	—	—	15,192,877	19,164,887	12,577,778
Settlers' effects.....	27,687,288	33,663,823	29,606,381	1,443,412	1,568,759	2,076,926	22,357,317	27,309,412	22,663,481
Gifts and donations.....	1,606,477	1,688,922	2,301,802	149,175	202,116	150,537	130,767	112,492	126,281
All other articles exported.....	1,970,969	6,319,884	6,468,780	22,226	88,961	90,367	1,838,055	5,324,757	5,386,345
Totals, Miscellaneous Commodities.....	124,232,890	154,147,444	202,221,290	2,587,138	3,646,035	14,559,120	75,392,014	76,474,252	64,494,463
Grand Totals, Exports.....	4,769,745,693	4,824,232,926	4,823,347,122	812,706,074	722,666,931	779,803,626	2,818,655,010	2,867,605,402	2,827,416,902

Section 5.—Imports and Exports by Degree of Manufacture, by Origin and by Purpose

The tables in this Section present Canada's trade according to three alternative classifications other than the classification by component material used in Section 4.

17.—Imports according to Degree of Manufacture, by Leading Countries, 1957 and 1958

Country	1957			1958		
	Raw Materials	Partly Manufactured	Fully or Chiefly Manufactured	Raw Materials	Partly Manufactured	Fully or Chiefly Manufactured
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
North America¹	490,364²	147,273²	3,365,678²	408,990	123,413	3,044,143
United States.....	490,123 ²	147,170 ²	3,361,256 ²	408,825	123,086	3,040,468
Central America and Antilles¹	73,990	35,768	53,004	85,201	26,752	54,776
West Indies Federation.....	27,387	23,648	5,007	24,602	10,233	6,424
Barbados.....	—	5,867	1,761	—	1,531	2,430
Jamaica.....	25,663	14,908	1,639	18,775	6,533	2,269
Trinidad and Tobago.....	5,724	2,875	1,607	6,827	2,298	1,725
Cuba.....	1,354	9,722	2,789	1,704	14,206	2,970
Honduras.....	4,562	—	13	4,894	7	2
Mexico.....	16,683	367	4,062	28,425	529	3,105
Netherlands Antilles.....	—	—	39,269	40	—	39,764
Panama.....	7,190	1	7	7,459	1	29
South America¹	313,801	10,749	16,799	262,043	10,101	19,349
British Guiana.....	8,954	10,345	1,705	9,361	9,358	1,925
Argentina.....	1,818	35	2,850	1,973	9	3,454
Brazil.....	31,158	246	3,921	23,485	396	3,615
Colombia.....	18,140	22	28	16,274	142	168
Ecuador.....	4,407	3	18	4,933	8	26
Venezuela.....	242,012	—	6,133	200,663	—	8,927
Northwestern Europe¹	19,946	47,848	715,142	22,453	41,086	733,999
United Kingdom.....	11,819	41,024	469,115	11,915	33,289	481,446
Belgium and Luxembourg.....	690	2,833	40,544	607	2,365	33,050
Denmark.....	1,928	13	6,676	1,731	21	6,028
France.....	621	1,019	34,542	2,137	1,410	37,543
Germany, Federal Republic of.....	1,036	770	95,841	375	1,109	104,459
Netherlands.....	3,225	1,898	20,273	4,256	2,307	22,977
Sweden.....	264	84	15,221	915	192	13,034
Switzerland.....	77	—	24,583	63	10	26,895
Southern Europe¹	3,014	3,306	35,652	1,898	4,537	36,734
Italy.....	2,252	1,582	29,179	1,117	1,871	29,832
Spain.....	643	1,507	3,446	618	2,512	3,619
Eastern Europe¹	3,011	495	7,635	1,589	754	8,730
Czechoslovakia.....	16	—	5,029	6	—	4,944
Middle East¹	35,547	106	2,852	69,860	165	3,534
Arabia.....	34,315	—	2	68,021	—	2
Lebanon.....	1	—	43	2	—	78
Other Asia¹	33,308	14,981	103,795	23,534	13,417	111,886
Ceylon.....	1,048	2,617	11,251	2,226	1,208	9,435
Hong Kong.....	896	43	6,284	886	95	7,841
India.....	2,013	172	27,063	1,031	328	26,338
Malaya and Singapore.....	21,217	5,724	415	13,259	5,691	954
China.....	2,368	20	2,916	2,173	120	3,082
Japan.....	3,355	3,559	54,691	2,056	4,597	63,563
Other Africa¹	20,624	13,634	3,350	15,893	7,915	4,429
British East Africa.....	4,067	34	888	3,789	—	1,306
Mauritius and Seychelles.....	—	10,278	—	1	5,917	—
Union of South Africa.....	3,207	1,770	1,882	4,529	1,114	2,386
Oceania¹	12,191	23,592	15,955	13,199	23,443	18,519
Australia.....	4,993	12,383	11,352	4,783	14,203	13,934
Fiji.....	—	7,215	3	—	5,727	1
New Zealand.....	6,998	3,913	859	8,127	3,262	204
Totals, Imports	1,005,799²	297,749²	4,319,862²	904,670	251,583	4,036,098

¹ Includes other countries not specified.

² Less than \$500.

18.—Exports of Canadian Produce according to Degree of Manufacture, by Leading Countries, 1957 and 1958

Country	1957			1958		
	Raw Materials	Partly Manufactured	Fully or Chiefly Manufactured	Raw Materials	Partly Manufactured	Fully or Chiefly Manufactured
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
North America¹	856,526^r	918,468^r	1,097,225	909,221	844,062	1,076,945
United States.....	855,541 ^r	918,330 ^r	1,093,737	908,109	843,985	1,075,322
Central America and Antilles¹	7,744	20,578	139,964	7,945	19,460	102,860
West Indies Federation.....	3,615	1,533	30,814	4,204	1,588	25,747
Barbados.....	443	614	3,608	484	461	3,253
Jamaica.....	1,223	496	17,769	1,648	511	13,581
Trinidad and Tobago.....	1,949	424	9,437	2,071	615	8,912
Cuba.....	457	1,744	14,689	356	1,893	15,347
Dominican Republic.....	299	198	4,526	136	336	4,896
Mexico.....	1,198	10,781	30,634	516	8,877	22,172
Panama.....	53	152	30,460	62	136	5,196
Puerto Rico.....	1,057	3,914	7,638	1,269	4,149	7,152
South America¹	12,683	19,142	90,715	16,837	16,533	77,677[±]
British Guiana.....	891	223	3,955	882	130	3,055
Argentina.....	178	2,195	11,826	121	227	6,158
Brazil.....	416	6,493	18,888	297	6,728	14,144
Chile.....	18	809	3,534	21	2,305	2,276
Colombia.....	824	3,063	10,741	727	2,901	10,237
Peru.....	2,799	1,532	5,777	3,333	1,688	6,480
Venezuela.....	6,142	3,408	30,293	9,698	2,120	31,836
Northwestern Europe¹	548,729^r	368,836^r	256,417	588,039	346,751	348,737
United Kingdom.....	280,288 ^r	276,638 ^r	165,743	337,385	244,567	191,851
Austria.....	2,829	2,361	1,522	3,622	1,737	2,176
Belgium and Luxembourg.....	36,136	7,705	16,561	31,634	10,422	27,647
France.....	16,730	21,694	19,083	9,275	20,392	15,506
Germany, Federal Republic of.....	88,974	36,762	26,203	72,396	44,264	85,203
Ireland.....	5,163	1,117	2,119	4,862	1,572	2,284
Netherlands.....	50,598	10,630	8,621	52,975	13,107	8,842
Norway.....	50,742	736	4,070	52,202	1,075	2,708
Sweden.....	1,917	5,937	4,257	1,789	4,731	4,487
Switzerland.....	14,647	4,253	6,145	20,913	4,087	4,499
Southern Europe¹	23,939^r	37,468^r	17,317	9,574	21,348	14,683
Italy.....	19,359 ^r	32,058 ^r	11,424	6,848	16,446	6,621
Spain.....	282	3,400	2,233	67	3,640	3,008
Eastern Europe¹	25,710	636	4,429	18,177	856	6,020
Czechoslovakia.....	75	56	1,291	147	355	854
Poland.....	16,207	235	228	7	36	602
Union of Soviet Socialist Republics.....	9,087	2	1,569	16,682	—	2,186
Middle East.....	3,480	2,828	7,489	3,981	1,955	9,683
Other Asia¹	96,611^r	52,629^r	77,983	140,265	26,145	79,863
India.....	5,316	9,077	14,599	14,092	24,915	24,915
Hong Kong.....	691	1,233	5,670	545	1,419	4,090
Pakistan.....	1,991	904	8,500	5,115	173	10,096
Japan.....	88,239 ^r	37,214 ^r	13,699	86,454	6,839	11,634
Philippines.....	127	1,160	16,253	705	710	12,673
Other Africa¹	950	18,043	46,810	2,003	14,142	48,088
Federation of Rhodesia and Nyasaland.....	461	1,929	2,566	1,148	814	1,953
Union of South Africa.....	304	13,588	34,549	292	11,888	37,855
Oceania¹	1,762	21,845	47,278	3,402	24,204	43,883
Australia.....	1,545	17,777	29,561	3,188	20,419	29,148
New Zealand.....	135	2,602	14,227	88	2,638	12,376
Totals, Exports.....	1,578,133^r	1,460,472^r	1,785,627	1,699,446	1,315,456	1,808,445

¹ Includes other countries not specified.

19.—Imports according to Origin, by Group and Degree of Manufacture, 1957 and 1958

NOTE.—Many of the 1957 figures in this table have been revised since they were published in the 1959 Year Book.

Origin	1957			1958		
	United Kingdom	United States	All Countries	United Kingdom	United States	All Countries
Farm Origin	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
CANADIAN FARM PRODUCTS—¹						
Field Crops—						
Raw materials.....	458	118,627	128,469	494	119,037	134,976
Partly manufactured.....	14	9,669	10,462	5	9,371	10,151
Fully or chiefly manufactured.....	24,585	48,856	87,575	26,079	48,161	89,599
Totals, Field Crops.....	25,057	177,153	226,505	26,578	176,570	234,726
Animal Husbandry—						
Raw materials.....	3,244	24,985	42,885	2,635	24,042	41,391
Partly manufactured.....	19,856	7,991	33,809	16,660	7,081	29,113
Fully or chiefly manufactured.....	55,124	21,860	113,085	51,140	20,929	103,910
Totals, Animal Husbandry.....	81,224	54,837	189,780	70,435	52,052	174,414
All Canadian Farm Products—						
Raw materials.....	3,701	143,612	171,355	3,129	143,080	176,367
Partly manufactured.....	19,870	17,660	44,271	16,666	16,453	39,264
Fully or chiefly manufactured.....	82,709	70,717	200,659	77,219	69,090	193,508
TOTALS, CANADIAN FARM PRODUCTS.....	106,281	231,991	416,285	97,014	228,622	409,140
FOREIGN FARM PRODUCTS—¹						
Field Crops—						
Raw materials.....	1,478	97,986	233,483	2,009	86,176	222,391
Partly manufactured.....	1,119	15,293	102,396	3,918	13,220	87,477
Fully or chiefly manufactured.....	31,378	159,030	296,006	29,145	167,370	311,648
Totals, Field Crops.....	33,975	272,309	631,885	35,072	266,766	621,515
Animal Husbandry—						
Raw materials.....	2,232	6,338	9,738	3,929	5,656	10,863
Partly manufactured.....	—	54	91	—	6	40
Fully or chiefly manufactured.....	433	8,561	13,328	405	9,162	13,832
Totals, Animal Husbandry.....	2,665	14,952	23,158	4,334	14,824	24,734
All Foreign Farm Products—						
Raw materials.....	3,710	104,324	243,221	5,938	91,832	233,254
Partly manufactured.....	1,119	15,346	102,487	3,918	13,226	87,516
Fully or chiefly manufactured.....	31,811	167,591	309,333	29,550	176,532	325,480
TOTALS, FOREIGN FARM PRODUCTS.....	36,640	287,262	655,042	39,406	281,589	646,249
ALL FARM PRODUCTS—						
All Field Crops—						
Raw materials.....	1,936	216,614	361,952	2,503	205,213	357,367
Partly manufactured.....	1,133	24,962	112,857	3,924	22,591	97,628
Fully or chiefly manufactured.....	55,963	207,887	383,580	55,224	215,531	401,247
Totals, All Field Crops.....	59,032	449,463	858,390	61,651	443,335	856,241
All Animal Husbandry—						
Raw materials.....	5,476	31,323	52,624	6,564	29,698	52,254
Partly manufactured.....	19,856	8,045	33,901	16,660	7,087	29,152
Fully or chiefly manufactured.....	58,558	30,421	126,413	51,545	30,090	117,741
Totals, All Animal Husbandry.....	83,889	69,790	212,937	74,770	66,876	199,148

¹ In this classification the expression "Canadian Farm Products" refers to all commodities produced from basic raw materials such as are produced on Canadian farms. "Foreign Farm Products" covers materials or commodities such as Canada does not produce in their original forms, e.g., cane sugar, tea, rubber, cotton, silk, etc.

**19.—Imports according to Origin, by Group and Degree of Manufacture,
1957 and 1958—concluded**

Origin	1957			1958		
	United Kingdom	United States	All Countries	United Kingdom	United States	All Countries
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Farm Origin—concluded						
All Farm Products—						
Raw materials.....	7,411	247,937	414,576	9,067	234,912	409,621
Partly manufactured.....	20,989	33,007	146,758	20,584	29,678	126,780
Fully or chiefly manufactured.....	114,521	238,308	509,992	106,769	245,621	518,988
Totals, Farm Origin.....	142,921	519,252	1,071,326	136,421	510,211	1,055,389
Wildlife Origin						
Raw materials.....	748	8,716	11,737	835	8,214	10,804
Partly manufactured.....	189	2,607	2,956	372	2,267	3,053
Fully or chiefly manufactured.....	31	676	729	37	558	632
Totals, Wildlife Origin.....	969	11,999	15,421	1,244	11,040	14,488
Marine Origin						
Raw materials.....	51	3,962	5,632	18	4,500	5,704
Partly manufactured.....	—	—	—	—	—	—
Fully or chiefly manufactured.....	523	3,881	12,147	680	5,003	12,771
Totals, Marine Origin.....	574	7,843	17,779	698	9,503	18,475
Forest Origin						
Raw materials.....	—	12,581	12,698	—	10,485	10,571
Partly manufactured.....	42	40,857	45,764	206	41,876	48,874
Fully or chiefly manufactured.....	6,617	151,862	172,395	7,887	157,349	180,443
Totals, Forest Origin.....	6,659	205,300	230,858	8,092	209,710	239,888
Mineral Origin						
Raw materials.....	3,608	216,569	560,799	1,995	150,170	467,416
Partly manufactured.....	18,940	62,731	92,843	11,618	42,810	65,242
Fully or chiefly manufactured.....	279,465	2,300,980	2,818,742	297,353	1,961,279	2,506,338
Totals, Mineral Origin.....	302,013	2,580,280	3,472,384	310,965	2,154,260	3,038,995
Mixed Origin						
Raw materials.....	—	358	358	—	545	553
Partly manufactured.....	864	7,968	9,427	510	6,454	7,635
Fully or chiefly manufactured.....	67,958	665,549	805,857	68,720	670,656	816,927
Totals, Mixed Origin.....	68,823	673,875	815,641	69,230	677,655	825,115
Recapitulation						
Raw materials.....	11,819	490,123	1,005,799	11,915	408,825	904,670
Partly manufactured.....	41,024	147,169	297,749	33,289	123,086	251,583
Fully or chiefly manufactured.....	469,115	3,361,256	4,319,862	481,446	3,040,468	4,036,998
Grand Totals.....	521,958	3,998,549	5,623,410	526,650	3,572,379	5,192,351

20.—Exports according to Origin, by Group and Degree of Manufacture, 1957 and 1958

Origin	1957			1958		
	United Kingdom	United States	All Countries	United Kingdom	United States	All Countries
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Farm Origin						
CANADIAN FARM PRODUCTS—¹						
Field Crops—						
Raw materials.....	197,403	102,050	633,984	246,867	87,023	689,879
Partly manufactured.....	² 1,782	² 4,693	² 9,837	² 5,300	² 5,300	² 10,733
Fully or chiefly manufactured.....	44,640	78,987	176,197	36,279	81,633	174,894
Totals, Field Crops.....	242,043	185,730	820,018	283,146	173,956	875,506
Animal Husbandry—						
Raw materials.....	4,022	82,526	100,672	4,451	148,193	168,134
Partly manufactured.....	1,782	6,078	12,917	1,555	6,364	12,306
Fully or chiefly manufactured.....	5,096	12,573	32,562	5,664	12,668	39,310
Totals, Animal Husbandry.....	10,900	101,177	146,151	11,669	167,223	219,751
All Canadian Farm Products—						
Raw materials.....	201,425	184,575	734,656	251,318	235,215	858,013
Partly manufactured.....	1,782	10,771	22,754	1,555	11,664	23,039
Fully or chiefly manufactured.....	49,736	91,561	208,758	41,943	94,299	214,204
TOTALS, CANADIAN FARM PRODUCTS.....	252,943	286,907	966,169	294,815	341,178	1,095,257
FOREIGN FARM PRODUCTS—¹						
Field Crops—						
Raw materials.....	—	364	364	—	15	15
Partly manufactured.....	22	1,466	2,038	21	859	1,075
Fully or chiefly manufactured.....	254	9,304	18,326	294	9,198	16,799
Totals, Field Crops.....	276	11,134	20,728	315	10,070	17,888
Animal Husbandry—						
Raw materials.....	—	—	—	—	—	—
Partly manufactured.....	—	—	—	—	—	—
Fully or chiefly manufactured.....	—	1	4	—	2	3
Totals, Animal Husbandry.....	—	1	4	—	2	3
All Foreign Farm Products—						
Raw materials.....	—	364	364	—	15	15
Partly manufactured.....	22	1,466	2,038	21	859	1,075
Fully or chiefly manufactured.....	254	9,306	18,330	294	9,198	16,801
TOTALS, FOREIGN FARM PRODUCTS.....	276	11,136	20,732	315	10,072	17,891
ALL FARM PRODUCTS—						
All Field Crops—						
Raw materials.....	197,403	102,414	634,348	246,867	87,037	689,894
Partly manufactured.....	23	6,160	11,875	21	6,159	11,808
Fully or chiefly manufactured.....	44,894	88,291	194,523	36,573	90,828	191,693
Totals, All Field Crops.....	242,319	196,864	840,746	283,461	184,025	893,394
All Animal Husbandry—						
Raw materials.....	4,022	82,526	100,672	4,451	148,193	168,134
Partly manufactured.....	1,782	6,078	12,917	1,555	6,364	12,306
Fully or chiefly manufactured.....	5,096	12,575	32,566	5,664	12,668	39,313
Totals, All Animal Husbandry.....	10,900	101,179	146,155	11,669	167,225	219,754

¹ In this classification the expression "Canadian Farm Products" refers to commodities actually produced, in their original state, on Canadian farms. "Foreign Farm Products" covers materials or commodities such as Canada does not produce in their original forms, e.g., cane sugar, tea, rubber, cotton, silk, etc.

² Less than \$500.

**20.—Exports according to Origin, by Group and Degree of Manufacture,
1957 and 1958—concluded**

Origin	1957			1958		
	United Kingdom	United States	All Countries	United Kingdom	United States	All Countries
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Farm Origin—concluded						
All Farm Products—						
Raw materials.....	201,425	184,939	735,020	251,318	235,230	858,028
Partly manufactured.....	1,805	12,238	24,792	1,576	12,523	24,114
Fully or chiefly manufactured.....	49,990	100,866	227,089	42,237	103,496	231,006
Totals, Farm Origin.....	253,219	298,043	986,901	295,131	351,250	1,113,148
Wildlife Origin						
Raw materials.....	4,315	20,487	26,012	4,000	18,528	23,382
Partly manufactured.....	50	444	1,465	239	306	1,129
Fully or chiefly manufactured.....	3	493	570	15	476	538
Totals, Wildlife Origin.....	4,367	21,425	28,047	4,255	19,309	25,050
Marine Origin						
Raw materials.....	17	83,032	84,236	11	89,326	90,765
Partly manufactured.....	23	492	516	68	308	376
Fully or chiefly manufactured.....	7,259	13,185	47,133	24,733	13,193	63,117
Totals, Marine Origin.....	7,298	96,710	131,885	24,812	102,827	154,258
Forest Origin						
Raw materials.....	7,061	53,300	66,414	4,752	40,741	48,704
Partly manufactured.....	77,160	460,918	602,940	67,760	487,631	606,808
Fully or chiefly manufactured.....	58,122	657,707	786,868	60,916	634,829	758,573
Totals, Forest Origin.....	142,343	1,171,925	1,456,222	133,427	1,163,201	1,414,085
Mineral Origin						
Raw materials.....	67,471	511,714	664,382	77,305	521,860	676,143
Partly manufactured.....	197,575	443,090	829,190	174,920	342,338	681,686
Fully or chiefly manufactured.....	18,728	186,578	404,646	14,502	197,376	386,384
Totals, Mineral Origin.....	283,774	1,141,382	1,898,218	266,726	1,061,575	1,744,212
Mixed Origin						
Raw materials.....	—	2,069	2,069	—	2,424	2,424
Partly manufactured.....	26	1,148	1,569	5	879	1,342
Fully or chiefly manufactured.....	31,642	134,907	319,321	49,447	125,952	368,828
Totals, Mixed Origin.....	31,667	138,123	322,959	49,452	129,254	372,594
Recapitulation						
Raw materials.....	280,288	855,541	1,578,133	337,385	908,109	1,699,446
Partly manufactured.....	276,638	918,330	1,460,472	244,567	843,985	1,315,456
Fully or chiefly manufactured.....	165,743	1,093,737	1,785,627	191,851	1,075,322	1,808,445
Grand Totals.....	722,669	2,867,608	4,824,233	773,804	2,827,417	4,823,347

21.—Imports according to Purpose, by Group, 1957 and 1958

NOTE.—Many of the 1957 figures in this table have been revised since they were published in the 1959 Year Book.

Group and Purpose	1957			1958		
	United Kingdom	United States	All Countries	United Kingdom	United States	All Countries
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Producers' Materials.....	203,592	1,100,028	1,837,695	175,824	924,735	1,603,934
Farm Materials—						
Fodders.....	7	24,689	24,700	5	25,819	27,938
Fertilizers.....	192	11,898	14,169	247	11,444	13,573
Seeds.....	112	4,848	5,690	110	6,225	7,475
Other.....	1,247	11,345	14,320	1,023	11,070	14,400
Totals, Farm Materials.....	1,557	52,780	58,879	1,386	54,557	63,027
Manufacturers' Materials—						
Foods and beverages.....	453	5,661	13,007	358	3,655	10,941
Tobacco, smokers' supplies.....	172	2,158	3,267	134	2,382	3,550
Textile, clothing, cordage.....	70,460	157,515	291,934	58,006	140,721	267,515
Fur and leather goods.....	7,936	30,107	43,879	10,235	27,400	43,254
Sawmills.....	—	—	—	—	—	—
Rubber industries.....	738	18,125	41,590	639	17,633	33,901
Other manufactures.....	81,649	618,096	1,092,236	73,635	504,556	951,556
Totals, Manufacturers' Materials....	161,409	831,662	1,485,913	143,007	696,347	1,311,017
Building and Construction Materials.....	40,571	213,058	290,244	31,355	171,272	227,179
Other Producers' Materials.....	54	2,528	2,658	76	2,558	2,711
Producers' Equipment.....	100,149	1,077,697	1,251,394	102,703	907,908	1,077,833
Farm.....	7,540	199,742	212,705	7,944	197,147	210,676
Commerce and industry.....	92,609	877,955	1,038,689	94,760	710,761	867,157
Fuel, Electricity and Lubricants.....	2,576	216,981	267,959	1,129	161,134	213,237
Fuel.....	2,457	200,765	251,548	1,064	147,661	199,579
Electricity.....	—	1,406	1,406	—	887	887
Lubricants.....	120	14,810	15,005	65	12,586	12,771
Transport.....	69,219	526,362	621,817	104,077	479,011	625,104
Road.....	42,385	382,691	450,452	66,546	346,848	455,808
Rail.....	669	25,367	26,108	673	12,726	13,657
Water.....	2,388	13,314	16,259	3,105	13,623	18,643
Aircraft.....	23,776	104,990	128,999	33,752	105,814	139,995
Auxiliary Materials for Commerce and Industry.....	6,417	48,253	61,660	5,886	49,739	63,577
Advertising material.....	449	7,420	8,166	529	7,722	8,695
Containers.....	5,579	28,999	41,048	5,018	30,403	42,734
Other.....	389	11,834	12,447	338	11,615	12,148
Consumer Goods.....	96,915	572,679	1,043,026	99,680	595,377	1,076,112
Foods.....	14,755	180,480	379,498	16,810	182,808	381,441
Beverages.....	13,208	37,877	142,290	13,482	42,218	142,090
Smokers' supplies.....	580	3,856	5,392	527	3,458	5,648
Clothing.....	20,327	23,140	63,650	17,999	23,636	68,996
Household goods.....	29,858	159,396	217,313	29,949	162,266	223,304
Jewellery, timepieces, etc.....	2,288	9,044	31,537	2,526	8,411	30,694
Books, educational supplies, etc.....	4,852	63,441	74,544	5,858	66,185	78,775
Recreational equipment, etc.....	5,034	44,053	60,438	5,428	49,546	70,904
Medical supplies, etc.....	4,355	39,993	50,708	5,057	44,892	55,541
Other.....	1,659	11,899	17,657	2,044	12,058	18,719
Munitions and War Stores, n. o. p.....	2,857	32,682	39,381	2,075	31,391	35,923
Live Animals for Food.....	1	1,472	1,472	—	771	774
Unclassified.....	40,234	422,395	499,006	35,277	422,313	492,857
Totals, Imports.....	521,958	3,998,549	5,623,410	526,650	3,572,379	5,192,351

¹ Less than \$500.

22.—Exports according to Purpose, by Group, 1957 and 1958

Group and Purpose	1957			1958		
	United Kingdom	United States	All Countries	United Kingdom	United States	All Countries
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Producers' Materials	640,998	2,272,166	3,750,839	646,996	2,150,506	3,587,501
Farm Materials—						
Fodders.....	39,347	71,214	140,280	59,219	48,458	129,890
Fertilizers.....	1	39,155	49,438	—	40,799	47,461
Seeds.....	1,288	8,896	15,456	2,818	10,191	18,211
Other.....	—	1,153	1,231	1	1,074	1,102
Totals, Farm Materials.....	40,636	120,418	206,406	62,037	100,523	196,663
Manufacturers' Materials—						
Foods and beverages.....	129,602	19,382	383,656	150,703	18,137	448,995
Tobacco, smokers' supplies.....	16,374	8	21,919	14,396	14	18,571
Textiles, clothing, cordage.....	4,041	2,285	13,074	2,323	1,582	8,305
Fur and leather goods.....	8,061	28,766	49,341	8,223	28,398	47,881
Sawmills.....	1,290	2,016	4,078	1,106	1,547	3,861
Rubber industries.....	1	303	320	—	275	279
Other manufactures.....	394,954	1,849,631	2,716,609	368,471	1,735,828	2,501,489
Totals, Manufacturers' Materials.....	554,323	1,902,389	3,188,997	545,221	1,785,781	3,029,381
Building and Construction Materials.....	46,036	248,446	352,510	39,714	263,184	359,183 ^a
Other Producers' Materials.....	3	913	2,927	24	1,018	2,274
Producers' Equipment	11,155	161,246	254,916	9,851	175,879	269,000
Farm.....	228	72,530	85,160	414	108,894	118,452
Commerce and industry.....	10,927	88,417	169,755	9,437	66,985	150,548
Fuel, Electricity and Lubricants	2,581	39,888	51,145	2,709	40,865	46,497
Fuel.....	2,581	20,690	31,648	2,709	28,279	33,607
Electricity.....	—	19,165	19,167	—	12,578	12,580
Lubricants.....	—	34	330	—	8	310
Transport	1,333	24,568	133,715	12,001	23,963	175,906
Road.....	403	5,324	48,895	479	7,061	45,352
Rail.....	1	1,900	12,869	—	1,020	2,370
Water.....	673	1,206	32,041	11,269	905	19,071
Aircraft.....	258	16,137	39,910	253	14,977	109,113
Auxiliary Materials for Commerce and Industry	1,335	4,714	10,367	3,014	4,471	11,838
Containers.....	1,335	4,711	10,269	3,013	4,470	11,804
Other.....	1	3	98	1	1	134
Consumer Goods	41,136	233,886	396,696	68,805	266,191	468,203
Foods.....	37,772	144,682	272,755	60,997	174,073	341,483
Beverages.....	604	65,476	72,640	533	69,365	75,756
Smokers' supplies.....	66	43	322	61	56	323
Clothing.....	547	3,033	6,177	358	2,854	5,396
Household goods.....	656	1,994	8,680	220	1,963	7,593
Jewellery, timepieces, etc.....	7	148	1,202	3	115	1,107
Books, educational supplies, etc.....	679	5,679	10,731	690	5,218	10,767
Recreational equipment, etc.....	464	10,382	13,750	481	10,450	13,500
Medical supplies, etc.....	252	2,381	9,965	3,396	2,069	11,916
Other.....	90	68	474	64	27	365
Munitions and War Stores, n.o.p.	4	30	201	13	23	732
Live Animals for Food	—	42,602	42,701	—	86,427	86,522
Unclassified	24,126	88,508	183,653	30,414	79,094	177,048
Totals, Exports	722,669	2,867,608	4,824,233	773,804	2,827,417	4,823,347

¹ Less than \$500.

Section 6.—Comparison of Value, Price and Volume of Foreign Trade

In the postwar period there has been a substantial increase in the value of Canada's exports and imports. Changes in the value of trade, however, are the joint product of changes in the volume of goods traded and in the prices at which transactions are conducted. To assess the significance of value changes, it is desirable to isolate the contributions made to them by the price and volume factors.

Special indexes of export and import prices have been developed to provide this information. These indexes are based chiefly on unit values (average prices) calculated from the trade statistics, supplemented by information on wholesale and retail prices. Price relatives are calculated for a sample of commodities representing the greater part of export and import trade, and these relatives are weighted by the percentage of 1948 trade represented by each commodity in the sample in obtaining group and total indexes. By dividing these price indexes into the trade values the effects of price change are removed from the values, or by dividing the price index into an index of values on the same time-base an index is obtained showing changes in the volume of trade from year to year.

The grouping of commodities used in these calculations differs slightly from that of the regular trade statistics, changes being desirable to simplify the pricing problem. The chief difference is that the first two main groups of the trade statistics have been combined into one group, "agricultural and animal products", and that the sub-group "rubber and its products" has been transferred from this group to the "miscellaneous group".

The import totals differ from those usually published by the exclusion of certain goods brought into Canada by the governments of the United Kingdom and other NATO countries for the use of their defence forces. Table 23 shows the value of trade adjusted for pricing purposes, and the value, price and volume indexes of Canadian trade for 1955-58. In the period covered by this table, import prices as a whole rose steadily, although there was considerable fluctuation in certain individual groups. Export prices, on the other hand, increased in 1955 and 1956, declined very slightly in 1957 and advanced slightly again in 1958. Notwithstanding the increase in import prices, imports were reduced in value in 1957 and 1958 as a result of a significant decline in volume, particularly in the later year; exports in the same year decreased moderately in value but increased in volume.

23.—Declared Values, and Value, Price and Physical Volume Indexes of Foreign Trade, by Commodity Groups, 1955-58

NOTE.—Many of the 1957 figures in this table as well as some of those for previous years have been revised since they were published in the 1959 Year Book.

Commodity Group ¹	1955	1956	1957	1958
DECLARED VALUES				
	\$'000	\$'000	\$'000	\$'000
Declared Values of Imports	4,712,370	5,705,449	5,623,410	5,192,351
Agricultural and animal products.....	600,292	673,870	705,432	716,373
Fibres and textiles.....	381,613	416,390	408,651	387,297
Wood products and paper.....	188,431	220,279	217,722	226,912
Iron and steel and products.....	1,597,472	2,221,640	2,122,967	1,844,480
Non-ferrous metals and products.....	411,512	503,327	495,540	442,795
Non-metallic minerals and products.....	659,171	760,785	771,763	676,000
Chemicals and fertilizer.....	265,012	293,772	299,718	297,212
Miscellaneous.....	563,504	566,081	573,182	574,180
Totals, Adjusted Imports ²	4,667,007	5,656,145	5,594,976	5,165,249
Imports for use of U.K. and NATO Governments.....	45,363	49,304	28,435	27,102
Declared Values of Exports³	4,281,784	4,789,746	4,824,233	4,823,347
Agricultural and animal products.....	1,006,146	1,225,876	1,124,543	1,275,150
Fibres and textiles.....	22,816	22,568	27,162	20,660
Wood products and paper.....	1,520,921	1,514,458	1,456,125	1,413,989
Iron and steel and products.....	402,957	465,712	549,641	450,572
Non-ferrous metals and products.....	847,499	952,330	981,742	1,023,607
Non-metallic minerals and products.....	211,624	299,241	357,287	250,351
Chemicals and fertilizer.....	183,507	182,854	195,303	197,051
Miscellaneous.....	86,314	126,707	132,430	191,967

For footnotes, see end of table, p. 1046.

23.—Declared Values, and Value, Price and Physical Volume Indexes of Foreign Trade by Commodity Groups, 1955-58—concluded

Commodity Group ¹	1955	1956	1957	1958
VALUE INDEXES (1948=100)				
Imports²	177.1	214.7	212.4	196.1
Agricultural and animal products.....	149.0	167.2	175.0	177.8
Fibres and textiles.....	108.8	118.8	116.6	110.5
Wood products and paper.....	287.1	312.2	308.6	321.6
Iron and steel and products.....	205.9	285.6	271.0	235.4
Non-ferrous metals and products.....	263.1	321.8	316.8	283.1
Non-metallic minerals and products.....	109.3	126.1	127.9	112.1
Chemicals and fertilizer.....	218.5	242.2	247.1	245.0
Miscellaneous.....	386.0	387.7	392.6	393.3
Domestic Exports³	139.2	155.7	156.9	157.2
Agricultural and animal products.....	96.2	117.3	107.6	122.0
Fibres and textiles.....	50.1	49.5	59.6	45.4
Wood products and paper.....	159.5	158.8	152.7	148.3
Iron and steel and products.....	111.0	128.3	151.5	124.2
Non-ferrous metals and products.....	214.0	240.5	247.9	262.2
Non-metallic minerals and products.....	223.0	315.3	376.4	263.8
Chemicals and fertilizer.....	229.8	229.0	244.6	246.8
Miscellaneous.....	88.9	130.5	136.4	197.8
PRICE INDEXES (1948=100)				
Imports²	110.5	113.0	116.4	116.5
Agricultural and animal products.....	99.8	99.8	104.0	100.3
Fibres and textiles.....	95.5	89.2	90.2	86.6
Wood products and paper.....	119.4	123.8	126.0	138.7
Iron and steel and products.....	125.2	133.2	138.1	143.1
Non-ferrous metals and products.....	124.8	132.8	131.3	132.8
Non-metallic minerals and products.....	100.6	102.0	108.5	106.5
Chemicals and fertilizer.....	109.9	111.7	110.9	112.7
Miscellaneous.....	119.7	118.3	113.2	106.9
Domestic Exports³	117.7	121.4	121.0	120.6
Agricultural and animal products.....	96.5	95.9	95.7	96.6
Fibres and textiles.....	106.4	108.7	112.4	108.0
Wood products and paper.....	118.0	120.1	119.9	119.3
Iron and steel and products.....	134.8	143.1	151.5	157.1
Non-ferrous metals and products.....	149.4	165.0	153.9	143.6
Non-metallic minerals and products.....	149.9	156.1	159.6	165.3
Chemicals and fertilizer.....	114.8	113.9	113.3	114.5
Miscellaneous.....	125.2	126.6	128.9	128.8
VOLUME INDEXES (1948=100)				
Imports²	160.3	190.0	182.5	168.3
Agricultural and animal products.....	149.3	167.5	168.3	177.3
Fibres and textiles.....	113.9	133.2	129.3	127.6
Wood products and paper.....	223.7	252.2	244.9	231.9
Iron and steel and products.....	162.9	212.9	196.2	164.5
Non-ferrous metals and products.....	210.8	242.3	241.3	213.2
Non-metallic minerals and products.....	108.6	123.6	117.9	105.3
Chemicals and fertilizer.....	198.8	216.8	222.8	217.4
Miscellaneous.....	322.5	327.7	346.8	367.9
Domestic Exports³	118.3	128.3	129.7	130.3
Agricultural and animal products.....	99.7	122.3	112.4	126.3
Fibres and textiles.....	47.1	45.5	53.0	42.0
Wood products and paper.....	135.2	132.2	127.4	124.3
Iron and steel and products.....	82.3	89.7	100.0	79.1
Non-ferrous metals and products.....	143.2	145.8	161.1	182.6
Non-metallic minerals and products.....	148.8	202.0	235.8	159.6
Chemicals and fertilizer.....	200.2	201.1	215.9	215.5
Miscellaneous.....	71.0	103.1	105.8	153.6

¹ Groups, though classified by component material, differ slightly from conventional groups (see text, p. 1045).

²Excludes imports for the use of the United Kingdom and other NATO Governments.

³Excludes exports of foreign produce.

PART III.—EXTERNAL TRANSACTIONS*

Section 1.—Canadian Balance of International Payments

Canada's total commercial and financial transactions with other countries are presented in summary form in statements of the Canadian balance of international payments. The current account statement, covering all current exchanges of goods and services, indicates the main categories of transactions giving rise to receipts from and expenditures abroad, and the extent to which these are out of balance. The capital account presents an analysis of the movements of short-term and long-term capital that have occurred during a comparable period.

Each year since 1950, with the exception of 1952, Canada's current expenditures abroad exceeded external current receipts. The current account deficits that resulted in this period of rapid Canadian development were financed by inflows of capital. Current account deficits have customarily been associated with periods of Canadian prosperity, and the rate of recent Canadian growth with the development of new resources has been once again the underlying element in the strength of Canadian demands for imported goods and services. High levels of investment at a time when defence expenditures were also very heavy, together with rising levels of consumption, contributed to the deficits. Until 1956 the deficits in recent years were not large in proportion to the high levels of total current transactions and capital inflows of a long-term type were large enough to finance the deficits in most periods. In 1956 and 1957, as the result of continuing high levels of investment and consumption, the deficits rose to unprecedented peaks of \$1,366,000,000 and \$1,455,000,000; at the same time, inflows of capital in long-term forms rose very sharply. The figure for 1958, reflecting some moderation of economic activity in Canada, was substantially smaller than in the preceding years but nevertheless amounted to \$1,131,000,000. And in 1959 the deficit on current account again reached peak levels at \$1,429,000,000, considerably more than the net inflow of long-term capital.

Current Account Transactions.—There were significant changes in the underlying sources of the deficits on current account of around \$1,400,000,000 that occurred in 1956, 1957 and 1959. The balance on merchandise account† fell between 1956 and 1959 by \$348,000,000 and, at the same time, there was a rise of \$411,000,000 in the deficit from non-merchandise transactions. In 1959 non-merchandise transactions contributed \$1,049,000,000 to the deficit on current account and merchandise transactions contributed \$380,000,000, whereas in 1956 the merchandise deficit had accounted for more than one-half of the total deficit. While the merchandise deficit has varied widely, the deficit on non-merchandise transactions has risen year by year from \$325,000,000 in 1952 to more than three times that figure in 1959.

In recent years the relative importance of exports of materials for industry—in such broad areas as forest products, metals and minerals—has been increasing and the relative position of wheat and some other agricultural products has declined. In addition to new products for export—such as iron ore, petroleum and uranium—there have been general increases in the productive capacity of more traditional staples like pulp and paper, nickel, aluminum and copper. Expansions in demand for industrial materials produced by leading primary industries were responsible for most of a gain of \$266,000,000 in 1959 in merchandise exports, which reached \$5,153,000,000. Merchandise imports rose at the same time by \$467,000,000 to a total of \$5,533,000,000. Imports have demonstrated much more flexibility than exports in recent years. The increases in 1959 were widely distributed as usually occurs in a period of rising economic activity. Details of Canada's foreign trade are covered in Parts I and II of this Chapter.

* Prepared in the Balance of Payments Section, International Trade Division, Dominion Bureau of Statistics. More detailed information is given in the annual publication *Canadian Balance of International Payments and International Investment Position* (Catalogue No. 67-201), and in *Quarterly Estimates of the Canadian Balance of International Payments* (Catalogue No. 67-001).

† The adjustments from commodity trade statistics to merchandise imports and exports for balance of payments purposes include some items covered elsewhere in the balance of payments, as well as other adjustments necessary to conform to international receipts and payments.

The deficit on non-merchandise transactions has continued to grow with a persistence and significance characteristic of this type of transaction for some years. The 1959 deficit of \$1,049,000,000 was nine times as great as that in 1949 and more than twice as great as that for as recent a year as 1955. This rise is largely attributable to the continued rapid growth in Canada's indebtedness to other countries and to the high level of incomes spent by an enlarged population. More than one-half of this deficit in 1959 is directly related to Canada's indebtedness abroad and subject to the effects of continued growth. Total interest and dividend payments by Canadians to other countries reached \$656,000,000 in 1959. Other forms of transfer of investment income added over \$100,000,000 of related payments, and there were also large payments by Canadian subsidiaries to parent companies for services. Net payments of interest and dividends totalled \$473,000,000 while the net payments on account of all the above groups of transactions which are related to foreign investment amounted to well over \$600,000,000 in 1959, apart from some hundreds of millions of dollars accruing to non-residents which were retained in Canada for further investment and are not included in the current account.

The travel account involves substantial net outlays and reflects high levels of income in Canada. In 1959 net expenditures amounted to \$200,000,000. To these payments were added net deficits of \$90,000,000 from freight and shipping transactions, \$45,000,000 from inheritances and transfers by migrants, and very large net payments of \$389,000,000 covering business services, miscellaneous income, government transactions, and remittances. Against these expenditures there was \$148,000,000 available from new gold production.

The outstanding development in the bilateral pattern of Canada's current account in 1959 was the large deficit of \$214,000,000 that occurred with overseas countries. This replaced a surplus of \$45,000,000 in 1958 and reflected a contraction in the surplus with the United Kingdom and an enlarged deficit with other overseas countries. At the same time the deficit with the United States widened to \$1,215,000,000, although this was smaller than in some earlier years. The current deficit with overseas countries in 1959 contrasts with the former surplus which characteristically played a part in settling Canada's chronic current deficit with the United States.

Capital Movements.—In 1959, Canada again drew substantially on the resources, real and financial, of the remainder of the world. The inflow of capital for direct investment in foreign-controlled establishments during 1959 was placed at \$500,000,000. Transactions in Canadian securities led to a further inflow of \$661,000,000. These two groups of transactions added \$1,161,000,000 to Canadian external liabilities in long-term forms. On the long-term assets side, there were outflows of \$70,000,000 for direct investment abroad and \$36,000,000 for the acquisition of foreign stocks and bonds, but inflows of \$33,000,000 from net repayments on inter-governmental loans. Transactions in these long-term forms led to a net capital import of \$1,088,000,000 which was sufficient to finance about 76 p.c. of the current account deficit; the corresponding inflows of \$1,012,000,000 in 1958 were equivalent to 89 p.c. of the smaller deficit in that year. Including inflows from a reduction in official holdings of gold and foreign exchange offset in part by Canada's increased quota in the International Monetary Fund, and from increased holdings of Canadian dollars by non-residents, all other capital movements led to a net capital inflow of \$341,000,000 in 1959. In both 1958 and 1959 about 80 p.c. of the movement of capital in long-term forms was from the United States.

Inflows of capital for direct investment in foreign-controlled enterprises dominated the capital account of the Canadian balance of payments in most of the postwar years until 1956. These persistent and substantial receipts were directed particularly to resource development and associated industries and by far the largest part of the new capital went into the petroleum and natural gas industry, which has been one of the dynamic developments in the Canadian economy. Substantial amounts also went into other mining industries, particularly for the development of iron ore, and to various branches of manufacturing.

Since 1956 the inflow for direct investment has been dwarfed by the inflow of portfolio capital. This arose in part from substantial sales of outstanding Canadian stocks

as the non-resident investor added to his stake in Canadian growth. The largest factor in the increase, however, has been the voracious demands in the Canadian capital market, some of which have been diverted to foreign capital markets through the sale to non-residents of new issues of Canadian bonds and debentures. Corporation, provincial governments and municipalities have all been important borrowers abroad in recent years.

During this period of large deficits on current account there has been a tendency for a declining proportion to be financed by foreign direct and portfolio investments in Canadian establishments, and larger parts by increases in the net external debt of Canadian governments—federal, provincial and municipal—and in other net external liabilities, mainly short-term in Canada.

Comments and statistics on the effects of the unprecedented capital inflows of recent years upon the ownership of investments in Canada will be found in the Section on Canada's International Investment Position in Chapter XXIII.

1.—Current Account Transactions between Canada and All Countries, 1940-59

(Millions of dollars)

Year	Current Receipts ¹	Current Payments ²	Net Balance including Mutual Aid Exports	Wartime Grants and Mutual Aid	Net Balance on Current Account indicating Net Movement of Capital
1940.....	1,776	1,627	+149	—	+149
1941.....	2,458	1,967	+491	—	+491
1942.....	3,376	2,275	+1,101	-1,002	+99
1943.....	4,064	2,858	+1,206	-518	+688
1944.....	4,557	3,539	+1,018	-960	+58
1945.....	4,456	2,910	+1,546	-858	+688
1946.....	3,365	2,905	+460	-97	+363
1947.....	3,748	3,699	+49	—	+49
1948.....	4,147	3,696	+451	—	+451
1949.....	4,089	3,912	+177	—	+177
1950.....	4,297	4,574	-277	-57	-334
1951.....	5,311	5,683	-372	-145	-517
1952.....	5,858	5,494	+364	-200	+164
1953.....	5,737	5,934	-197	-246	-443
1954.....	5,520	5,668	-148	-284	-432
1955.....	6,072	6,548	-476	-222	-698
1956.....	6,621	7,830	-1,209	-157	-1,366
1957.....	6,622	7,970	-1,348	-107	-1,455
1958.....	6,579	7,568	-989	-142	-1,131
1959 ^p	6,859	8,225	-1,366	-63	-1,429

¹ Includes Mutual Aid exports.

² Excludes Mutual Aid offsets.

2.—Geographical Distribution of the Balance on Current Account between Canada and Other Countries, 1940-59

NOTE.—In the years 1942-46 balances include exports of currently produced goods provided as Mutual Aid or Official Contributions. (See also Table 1.)

(Millions of Canadian dollars)

Year	United States ¹	United Kingdom ²	Other Overseas Countries ³	All Countries	Year	United States ¹	United Kingdom ²	Other Overseas Countries ³	All Countries
1940.....	-292	+343	+98	+149	1950.....	-400	+24	+42	-334
1941.....	-318	+734	+75	+491	1951.....	-951	+223	+211	-517
1942.....	-180	+1,223	+58	+1,101	1952.....	-849	+388	+625	+164
1943.....	-19	+1,149	+76	+1,206	1953.....	-904	+133	+328	-443
1944.....	+31	+746	+241	+1,018	1954.....	-807	+229	+146	-432
1945.....	+36	+747	+763	+1,546	1955.....	-1,035	+330	+7	-698
1946.....	-607	+500	+567	+460	1956.....	-1,639	+252	+21	-1,366
1947.....	-1,134	+633	+550	+49	1957.....	-1,579	+118	+6	-1,455
1948.....	-393	+486	+358	+451	1958.....	-1,176	+104	-59	-1,131
1949.....	-601	+446	+332	+177	1959 ^p	-1,215	+47	-261	-1,429

¹ Includes all net exports of non-monetary gold.

² Excludes wheat exports diverted to other overseas

countries and exports of gold.

³ Includes estimated value of wheat sold in European countries.

3.—Balance of International Payments between Canada and All Countries, 1953-59

(Millions of dollars)

Item	1953	1954	1955	1956	1957	1958	1959 ^p
A. CURRENT RECEIPTS—							
Merchandise exports (adjusted).....	4,152	3,929	4,332	4,837	4,894	4,887	5,153
Mutual Aid to NATO countries.....	246	284	222	157	107	142	63
Gold production available for export.....	144	155	155	150	147	160	148
Tourist and travel expenditure.....	302	305	328	337	363	349	393
Interest and dividends.....	165	147	160	142	154	168	183
Freight and shipping.....	318	313	398	457	445	401	422
All other current credits.....	410	387	477	541	512	472	497
TOTALS, CURRENT RECEIPTS.....	5,737	5,520	6,072	6,621	6,622	6,579	6,859
B. CURRENT PAYMENTS—							
Merchandise imports (adjusted).....	4,210	3,916	4,543	5,565	5,488	5,066	5,533
Tourist and travel expenditure.....	365	389	449	498	525	542	593
Interest and dividends.....	404	423	483	523	589	612	656
Freight and shipping.....	374	356	415	502	515	460	512
Official contributions ¹	271	295	246	187	147	195	134
All other current debits.....	556	573	634	712	813	835	860
TOTALS, CURRENT PAYMENTS.....	6,180	5,952	6,770	7,987	8,077	7,710	8,288
Balance on merchandise trade.....	-58	+13	-211	-728	-594	-179	-380
Balance on other transactions.....	-385	-445	-487	-638	-861	-952	-1,049
C. CURRENT ACCOUNT BALANCE.....	-443	-432	-698	-1,366	-1,455	-1,131	-1,429
D. CAPITAL ACCOUNT—							
Direct Investment—							
Direct investment in Canada.....	+426	+392	+417	+583	+514	+420	+500
Direct investment abroad.....	-63	-81	-74	-104	-68	-48	-70
Canadian Securities—							
Trade in outstanding issues.....	-31	+63	-27	+199	+92	+88	+202
New issues.....	+335	+331	+166	+667	+798	+677	+704
Retirements.....	-146	-203	-184	-141	-133	-158	-245
Foreign security transactions.....	—	-24	-6	+2	+6	+3	-36
Repayments on Government of Canada war and postwar loans.....	+87	+72	+69	+69	+50	+30	+33
Subscriptions in gold and U.S. dollars to IBRD, IFC and IMF.....	—	—	—	-4	—	—	-59
Change in Canadian dollar holdings of foreigners.....	-18	+34	+89	-24	-35	+106	+12
Change in official holdings of gold and foreign exchange (increase, minus).....	+38	-124	+44	-33	+105	-109	+70
Other capital movements ²	-185	-28	+204	+152	+126	+122	+318
E. NET CAPITAL MOVEMENT.....	+443	+432	+698	+1,366	+1,455	+1,131	+1,429

¹ Includes Mutual Aid to NATO countries. omissions.² Includes unrecorded capital movements, and errors and**4.—Current and Capital Account Transactions between Canada and the United States, 1953-59**

(Millions of dollars)

Item	1953	1954	1955	1956	1957	1958	1959 ^p
A. CURRENT RECEIPTS—							
Merchandise exports (adjusted).....	2,458	2,355	2,598	2,854	2,931	2,908	3,193
Net exports of non-monetary gold.....	144	155	155	150	147	160	148
Travel expenditure.....	282	283	303	309	325	309	351
Interest and dividends.....	101	69	78	80	95	100	97
Freight and shipping.....	164	169	203	223	222	206	232
All other current receipts.....	294	275	363	399	350	327	355
TOTALS, CURRENT RECEIPTS.....	3,443	3,306	3,700	4,015	4,070	4,010	4,376

4.—Current and Capital Account Transactions between Canada and the United States, 1953-59—concluded

Item	1953	1954	1955	1956	1957	1958	1959 ^p
B. CURRENT PAYMENTS—							
Merchandise imports (adjusted).....	3,046	2,800	3,283	4,021	3,878	3,443	3,710
Travel expenditure.....	307	320	363	391	403	413	445
Interest and dividends.....	334	345	338	427	480	500	537
Freight and shipping.....	296	261	287	351	351	294	324
All other current payments.....	364	387	414	464	537	536	575
TOTALS, CURRENT PAYMENTS.....	4,347	4,113	4,735	5,654	5,649	5,186	5,591
C. CURRENT ACCOUNT BALANCE.....	-904	-807	-1,035	-1,639	-1,579	-1,176	-1,215
D. CAPITAL ACCOUNT—							
Direct Investment—							
Direct investment in Canada.....	+346	+288	+306	+406	+390	+303	+388
Direct investment abroad.....	-33	-46	-56	-70	-35	-3	-1
Canadian Securities—							
Trade in outstanding issues.....	-80	—	-67	+34	-65	+60	+95
New issues.....	+322	+299	+127	+601	+722	+600	+621
Retirements.....	-132	-184	-169	-133	-105	-132	-200
Foreign security transactions.....	+3	+4	+25	-3	+9	+2	-36
Subscriptions in gold and U.S. dollars to IBRD, IFC and IMF.....	—	—	—	—	—	—	-59
Change in Canadian dollar holdings of foreigners	-1	+19	+66	-48	-10	+83	+7
Change in official holdings of gold and foreign exchange (increase, minus).....	+42	-121	+42	-34	+104	-108	+67
Other capital movements ¹	-223	+18	+151	+103	+58	+147	+310
E. NET CAPITAL MOVEMENT.....	+244	+277	+425	+856	+1,068	+952	+1,192
F. BALANCE SETTLED BY EXCHANGE TRANSFERS...	+660	+530	+610	+783	+511	+224	+23
TOTALS, FINANCING OF CURRENT ACCOUNT BALANCE.....	+904	+807	+1,035	+1,639	+1,579	+1,176	+1,215

¹ Includes unrecorded capital movements, and errors and omissions.

5.—Current Account Transactions between Canada and the United Kingdom, 1953-59 (Millions of dollars)

Item	1953	1954	1955	1956	1957	1958	1959 ^p
A. CURRENT RECEIPTS—							
Merchandise exports (adjusted).....	656	660	772	818	734	766	781
Travel expenditure.....	12	13	13	14	18	18	18
Interest and dividends.....	28	35	41	14	10	32	34
Freight and shipping.....	79	73	97	98	95	84	79
All other current receipts.....	55	55	59	71	81	60	68
TOTALS, CURRENT RECEIPTS.....	830	836	982	1,015	938	960	980
B. CURRENT PAYMENTS—							
Merchandise imports (adjusted).....	463	391	406	493	520	537	596
Travel expenditure.....	31	35	40	46	47	52	61
Interest and dividends.....	57	62	75	73	78	76	80
Freight and shipping.....	42	39	49	59	69	70	82
All other current payments.....	104	80	82	92	106	121	114
TOTALS, CURRENT PAYMENTS.....	697	607	652	763	820	856	933
C. CURRENT ACCOUNT BALANCE.....	+133	+229	+330	+252	+118	+104	+47

Section 2.—Travel between Canada and Other Countries

New records were reached in the volume of travel between Canada and other countries during 1959 as the total number of visits to and from the country moved up from 56,100,000 in 1958 to an estimated 58,100,000, an increase of between 3 and 4 p.c. Visits to Canada by residents of the United States numbered 29,900,000, a gain of nearly 5 p.c., and visits by residents of overseas countries were between 13 and 14 p.c. higher. At the same time, visits to the United States by residents of Canada at 28,000,000 were up only 2 p.c. from 1958 whereas visits by Canadians to overseas countries advanced nearly 19 p.c.

Preliminary figures on expenditures for 1959 show more substantial percentage gains than number of visits. Residents of other countries spent about \$391,000,000 on travel in Canada, an amount 12 p.c. above the corresponding figure for 1958. Receipts from residents of the United States were \$351,000,000 and accounted for all of the increase of \$42,000,000 in total receipts, indicating that the greater number of visits was accompanied by generally higher expenditure per visit; receipts from residents of overseas countries remained unchanged in 1959 at \$40,000,000. During this record travel year, Canadians spent an estimated \$592,000,000 on travel in other countries, which amount was \$50,000,000 or about 9 p.c. higher than in 1958. Expenditures in the United States were \$448,000,000 and accounted for \$35,000,000 of the total increase. At the same time, payments for travel to overseas countries reached a new high of \$144,000,000, an increase of \$15,000,000 or nearly 12 p.c. over 1958. Thus the balance of payments on travel account with the United States decreased from a deficit of \$104,000,000 to one of \$97,000,000, whereas the balance with overseas countries advanced from a debit of \$89,000,000 to one of \$104,000,000. The net debit balance with all countries increased from \$193,000,000 in 1958 to a record \$201,000,000 in 1959.

Only the above summary figures, subject to revision, were available for 1959 at the time of writing; detailed information for 1958 is given in the following text and tables.

During 1958, as shown in Table 6, there were fewer visits made to Canada by non-residents than in the previous year but more visits made by Canadians to other countries. The decrease of 85,700 in total visits to Canada was more than accounted for by a decrease of 88,700 in the number of visitors from the United States as compared with 1957. On the other hand, the number of residents of overseas countries coming to Canada for travel purposes was higher by 3,000.

The increase in visits by Canadians to other countries amounted to 224,400; 212,300 more persons visited the United States and 12,100 more visited overseas countries, representing advances of 10.1 p.c. and 0.8 p.c., respectively, over the corresponding figures for 1957.

6.—Number and Expenditure of Foreign Travellers in Canada and Canadian Travellers Abroad, 1957 and 1958

Year and Class of Traveller	Foreign Travellers in Canada ¹	Foreign Expenditure in Canada	Canadians Travelling Abroad ¹	Canadian Expenditure Abroad	Excess of Foreign Travellers in Canada ¹	Excess of Canadian Expenditure Abroad
	No.	\$'000	No.	\$'000	No.	\$'000
1957						
Travellers from and to overseas countries.....	36,600	38,000	119,900	122,000	-83,300	+84,000
Travellers from and to the United States—						
Automobile—						
Short-term visit (under 48 hrs.)	19,813,300	54,900	17,945,600	43,300	+1,867,700	-11,600
Long-term visit.....	3,103,200	118,600	3,113,000	168,900	-9,800	+50,300
Rail.....	719,700	44,600	445,000	60,600	+274,700	+16,000
Boat.....	309,200	18,900	95,200	5,200	+214,000	-13,700
Bus (exclusive of local bus).....	375,200	27,500	453,700	40,100	-78,500	+12,600
Aircraft.....	352,700	40,600	332,700	70,300	+20,000	+29,700
Other (pedestrians, local bus, etc.)	3,946,100	20,200	4,824,200	14,600	-878,100	-5,600
Totals, United States.....	28,619,400	325,300	27,209,400	403,000	+1,410,000	+77,700
Totals, All Countries.....	28,656,000	363,300	27,329,300	525,000	+1,326,700	+161,700

¹For footnote, see end of table.

6.—Number and Expenditure of Foreign Travellers in Canada and Canadian Travellers Abroad, 1957 and 1958—concluded

Year and Class of Traveller	Foreign Travellers in Canada ¹	Foreign Expenditure in Canada	Canadians Travelling Abroad ¹	Canadian Expenditure Abroad	Excess of Foreign Travellers in Canada ¹	Excess of Canadian Expenditure Abroad
1958	No.	\$'000	No.	\$'000	No.	\$'000
Travellers from and to overseas countries.....	39,600	40,000	132,000	129,000	-92,400	+89,000
Travellers from and to the United States—						
Automobile—						
Short-term visit (under 48 hrs.)	19,562,200	51,500	19,010,900	42,300	+551,300	-9,200
Long-term visit.....	3,099,700	120,200	3,173,500	173,300	-73,800	+53,100
Rail.....	651,000	34,700	405,400	56,500	+245,600	+21,800
Boat.....	331,900	15,100	116,500	6,500	+215,400	-8,600
Bus (exclusive of local bus).....	369,900	26,300	435,100	42,300	-65,200	+16,000
Aircraft.....	368,100	41,500	361,100	78,100	+7,000	+36,600
Other (pedestrians, local bus, etc.)	4,147,900	20,100	3,919,200	14,300	+228,700	-5,800
Totals, United States.....	28,530,700	309,400	27,421,700	413,300	+1,109,000	+103,900
Totals, All Countries.....	28,570,300	349,400	27,553,700	542,300	+1,016,600	+192,900

¹ As these figures are the number of entries and re-entries into Canada, they include substantial amounts of in-transit, commuting and local traffic.

Travel by Residents of the United States in Canada.—Of the total number of visitors coming to Canada from the United States in 1958, about 79 p.c. travelled by automobile, 86 p.c. of them remaining in the country less than 48 hours and 14 p.c. for longer periods. However, only 55 p.c. of the total expenditures made in Canada by United States visitors in 1958 were made by automobile travellers. This was a slightly higher proportion than in 1957 since most of the decrease in expenditures by United States visitors in 1958 was recorded by the non-automobile classifications. American expenditures in Canada were about \$16,000,000 lower in 1958 than in the previous year, declining from \$325,300,000 to \$309,400,000.

The number of motor vehicles, passenger and commercial, entering Canada from the United States in 1958 was 9,167,380, about 1 p.c. fewer than in 1957. Table 7 shows the number of foreign vehicles coming into Canada through Canadian border points according to type of permit, and the number of Canadian vehicles returning from the United States through these same points during 1957 and 1958 together with percentage change from the earlier to the later year.

7.—Summary of Highway Traffic at Canadian Border Points, by Province, 1957 and 1958

Province or Territory	FOREIGN VEHICLES INWARD					
	Non-permit Class Local Traffic		Travellers' Vehicle Permits		Commercial Vehicles	
	1957	1958	1957	1958	1957	1958
	No.	No.	No.	No.	No.	No.
Atlantic Provinces.....	1,547,776	1,449,720	179,866	216,191	105,709	101,485
Quebec.....	594,244	575,956	425,870	407,214	113,524	96,256
Ontario.....	3,892,033	3,878,340	1,533,842	1,499,740	170,975	171,695
Manitoba.....	75,240	79,077	49,178	51,983	17,293	23,010
Saskatchewan.....	31,165	29,741	22,334	23,231	8,248	11,219
Alberta.....	25,194	22,809	48,770	46,788	8,028	8,711
British Columbia.....	120,573	130,909	284,790	292,768	34,213	40,641
Yukon Territory.....	847	337	10,424	9,476	172	83
Totals.....	6,287,072	6,166,889	2,555,074	2,547,391	458,162	453,100
Percentage change 1957-58.....	-1.9		-0.3		-1.1	

7.—Summary of Highway Traffic at Canadian Border Points, by Province, 1957 and 1958
—concluded

Province or Territory	CANADIAN VEHICLES RETURNING					
	After Stay of 24 Hours or Less		After Stay of Over 24 Hours		Commercial Vehicles	
	1957	1958	1957	1958	1957	1958
	No.	No.	No.	No.	No.	No.
Atlantic Provinces.....	1,692,852	1,671,214	152,791	149,265	132,536	115,691
Quebec.....	1,169,503	1,116,431	403,802	367,941	172,788	147,609
Ontario.....	2,864,208	3,019,548	476,225	471,324	244,371	218,691
Manitoba.....	137,949	141,089	71,864	73,387	22,220	26,559
Saskatchewan.....	86,364	82,622	32,481	31,911	10,128	8,037
Alberta.....	51,935	44,593	58,552	44,718	11,169	11,229
British Columbia.....	624,361	707,686	228,773	235,323	32,752	38,880
Yukon Territory.....	2,449	1,385	609	386	1,423	511
Totals.....	6,629,621	6,784,568	1,425,097	1,374,255	627,387	567,207
Percentage change 1957-58.....	+2.3		-3.6		-9.6	

Surveys of non-resident motorists travelling in Canada on vehicle permits have been conducted each year since 1955. In 1958 questionnaires were mailed to 128,000 visitors, the majority of whom had remained in Canada for three or more days. About 30 p.c. of those surveyed responded and their replies gave interesting information on patterns of travel behaviour, which followed approximately the same trends as in previous years. Nearly 14 p.c. of the respondents indicated that the trip taken in 1958 was their first to Canada and almost 68 out of every 100 United States residents indicated recreation as the reason for their visit, 23 p.c. reported visits to friends or relatives, 8 p.c. were on business and less than 1 p.c. specified shopping. Education and other purposes accounted for less than 2 p.c. Seasonal variation in purpose of trip was evident. During the third quarter of 1958, 81 p.c. of all respondents travelling in Canada were recreation-bound, in contrast with 38 p.c. in the first quarter. Visiting friends or relatives reached peaks in the first and fourth quarters with 39 p.c. and 38 p.c., respectively, although trips for this purpose did not vary greatly from season to season. On the other hand, business trips accounted for about 21 p.c. of the visits in the first quarter, 16 p.c. in the second, but only 2 p.c. in the third and 13 p.c. in the final quarter of the year.

For the whole year, about 77 p.c. of the persons covered by the questionnaires were adults but the proportion varied from 84 p.c. in the first quarter to 89 p.c. in the second, 72 p.c. during the summer vacation months of the third quarter, and 88 p.c. in the fourth. The highest percentage of adults entered through ports in Nova Scotia, while more children entered through Ontario than any other province.

The most popular form of accommodation for United States motorists travelling in Canada continued to be the motel or motor court, which attracted nearly 30 p.c. of the traffic. About 24 p.c. stayed with friends or relatives and the remainder at vacation cottages, camping grounds, tourist homes and so on. Time of the year, of course, affected type of accommodation and hotels were naturally patronized to a greater extent during the winter months when the use of motel and other accommodation was at a minimum. Type of accommodation also varied with purpose of trip. For example, hotels were used by almost 53 p.c. of those on business but only 22 p.c. of those specifying recreation, 35 p.c. of whom favoured motels or motor courts. About 76 p.c. of the persons visiting Canadian friends or relatives were accommodated in their homes. An analysis of accommodation

by province of entry showed varying results: the volume of travellers using motels or motor courts ranged from almost 61 p.c. in the Yukon Territory to 25 p.c. in Saskatchewan; 28 p.c. of those entering Quebec stayed in hotels, a higher percentage than in any other province; in Saskatchewan, almost 35 p.c. of the visitors stayed with friends or relatives but only 15 p.c. in Alberta specified such accommodation. Vacation cottages continued to be the most popular in Ontario, attracting almost 22 p.c. of its visitors. Tourist homes, most popular with persons entering through Nova Scotia, were of little significance in the western provinces which, however, recorded the highest percentage of campers and trailer coaches.

Survey statistics on mileage showed that United States motorists remaining in Canada one day or less had travelled 153 miles while in Canada, those remaining two days had covered 232 miles and motorists travelling for three days or more had averaged 688 miles. The maximum mileage travelled occurred during the third quarter when motorists remaining three days or more averaged 768 miles. Average mileage by purpose of trip for those respondents staying three days or more shows recreation with 686 miles, business 602 miles, visiting friends and relatives 497 miles, and shopping 270 miles. Mileage was also influenced by destination and province of entry. United States motorists reporting a destination within the province of entry travelled only 501 miles while those proceeding to destinations outside the province averaged 1,396 miles. Generally, all mileages reported were lower than in 1957.

Table 8 shows mileage travelled in Canada reported by United States motorists and Table 9 gives the percentage distribution of destination in Canada of United States motorists, classified by province of entry. The figures show that 21 p.c. of the respondents remaining in the country three days or more travelled beyond the province of entry.

8.—Average Mileage Reported by Motorists from the United States, by Province of Destination and of Entry, 1958

NOTE.—Information reported on special survey questionnaires (see text p. 1054) by travellers remaining in Canada three days or more.

Province of Destination	Province of Entry	Average Mileage Travelled	Province of Destination	Province of Entry	Average Mileage Travelled
		No.			No.
Newfoundland.....	Newfoundland.....	—	Manitoba.....	Manitoba.....	428.6
	Other provinces.....	2,195.3		Other provinces.....	948.5
	Canada.....	2,195.3		Canada.....	566.4
Prince Edward Island.	Prince Edward Island	—	Saskatchewan.....	Saskatchewan.....	878.8
	Other provinces.....	1,143.1		Other provinces.....	1,486.1
	Canada.....	1,143.1		Canada.....	1,059.7
Nova Scotia.....	Nova Scotia.....	938.2	Alberta.....	Alberta.....	980.2
	Other provinces.....	1,467.2		Other provinces.....	1,457.8
	Canada.....	1,303.5		Canada.....	1,223.7
New Brunswick.....	New Brunswick.....	476.7	British Columbia...	British Columbia...	353.6
	Other provinces.....	1,444.6		Other provinces.....	1,849.5
	Canada.....	576.3		Canada.....	416.1
Quebec.....	Quebec.....	413.3	Alaska (in transit to or from).....		3,092.4
	Other provinces.....	1,020.6	Canada ¹		688.4
	Canada.....	652.4			
Ontario.....	Ontario.....	523.5			
	Other provinces.....	921.0			
	Canada.....	535.8			

¹ Includes vehicles destined to Yukon Territory.

9.—Percentage Distribution of Destination in Canada of Motorists from the United States, classified by Province of Entry, 1958

NOTE.—Information reported on special survey questionnaires (see text p. 1054) by travellers remaining in Canada three days or more.

Province of Destination	Province of Entry								
	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon Territory
	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.	p.c.
Newfoundland.....	0.19	0.87	0.06	0.03	—	—	—	—	—
Prince Edward Island.....	3.53	9.66	0.13	0.04	—	—	—	—	—
Nova Scotia.....	74.72	36.57	0.61	0.33	—	—	—	0.02	—
New Brunswick.....	4.65	35.01	0.52	0.18	—	—	—	—	—
Quebec.....	2.97	12.72	82.72	11.52	0.27	—	0.09	0.06	—
Ontario.....	0.74	1.97	8.36	84.43	7.43	1.11	0.36	0.22	—
Manitoba.....	—	—	0.02	0.78	71.89	4.88	0.72	0.28	—
Saskatchewan.....	—	—	0.02	0.08	6.62	66.30	2.33	0.73	0.61
Alberta.....	—	—	0.06	0.29	6.89	18.18	63.41	10.31	0.61
British Columbia.....	—	0.04	0.15	0.11	3.38	2.22	10.94	82.15	0.61
Yukon Territory.....	—	—	—	0.01	—	—	0.27	0.14	1.83
Northwest Territories.....	—	—	—	—	—	—	—	0.06	—
Touring (no destination specified).....	13.20	3.16	7.31	1.91	1.76	0.88	7.26	2.27	—
In transit to Alaska.....	—	—	0.02	0.05	1.76	6.43	14.26	3.62	—
In transit to United States.....	—	—	0.02	0.24	—	—	0.36	0.14	96.34
Totals.....	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

A breakdown of expenditures shows that in 1958, visitors from the United States spent approximately the same proportion of each dollar on the same commodities as in 1957—between 31 and 32 cents on food and beverages, over 22 cents on lodging, 16 cents on transportation and close to 12 cents for other merchandise; 11 cents were spent on items not specified and 7 cents were used to purchase souvenirs and handicrafts.

Canadian Travel in the United States.—During 1958, immigration officials reported a record 27,400,000 border crossings by Canadians re-entering Canada from the United States. Furthermore, the downward trend in rate of increase experienced in previous years was reversed in 1958, when the advance amounted to 1 p.c. compared with an 0.5-p.c. gain in 1957. The increase of 440,000 re-entries recorded in the third and fourth quarters of the year was sufficient to offset a decrease in the first six months. Altogether, 8,726,030 Canadian vehicles re-entered Canada. Of these, 1,374,255 vehicles had been abroad more than 24 hours, 6,784,568 had been absent for 24 hours or fewer and 567,207 were commercial vehicles. The increase over 1957 amounted to 43,925 vehicles or about 0.5 p.c.

Expenditures by Canadians in the United States reached a new high of \$413,300,100, 2.5 p.c. above the 1957 figure. This increase was the result of an \$11,600,000 rise in the expenditures of long-term visitors, accompanied by a curtailment of \$1,400,000 in the spending of the short-term travellers. The average expenditure per visit in the long-term category increased from \$77.84 in 1957 to \$79.52 in 1958, but the average expenditure of the short-term traveller decreased slightly from \$2.54 to \$2.47. Canadian visitors to the United States, regardless of length of stay, averaged \$15.07 per visit or 1.8 p.c. more than in 1957, while the average outlay per person fell from \$24.21 in 1957 to \$23.84 in 1958. The average per visit is lowered considerably by commuter traffic and others who travel to the United States quite frequently. Nevertheless, Canadian average expenditures in the United States are considerably higher than the corresponding averages of United States visitors in Canada.

Purchases of merchandise, as declared under the \$100 customs exemption privilege, remained unchanged from 1957 at \$74,000,000 or \$55.53 per declaration and, comparable with the trend in recent years, continued to account for a smaller proportion of the total outlay.

Travel between Canada and Overseas Countries.—Travel between Canada and overseas countries again expanded during 1958 but at a much lower rate than in the previous year. The number of overseas residents coming to Canada advanced some 8 p.c. and re-entries of Canadians after visiting overseas increased by 10 p.c.; in 1957 the increases recorded for these two categories were 17 p.c. and 14 p.c., respectively. During 1958, 39,600 visitors came to Canada direct from overseas compared with 36,600 in 1957; 26,000 others entered Canada via the United States compared with 25,000 in 1957.

Aircraft as a means of trans-ocean travel continued to gain in popularity—21,415 or approximately 54 p.c. of the visitors coming direct from overseas countries travelled by air in 1958 compared with 19,022 or 52 p.c. in 1957. Canadian air and steamship facilities accommodated about 41 p.c. of the non-immigrant visitors arriving directly from overseas in 1958, down slightly from 1957 yet significantly higher than the 36 p.c. accommodated in 1956. On the other hand, most overseas residents entering Canada via the United States use foreign carriers for transportation to North America.

Residents of the United Kingdom represented a larger proportion (56 p.c.) of visitors in 1958 than in 1957 (54 p.c.); the proportion from other Commonwealth countries remained fairly constant at about 12 p.c., while the proportion arriving from other European countries fell from 27 p.c. to 25 p.c. Those originating in other areas remained unchanged at 7 p.c. Receipts from overseas visitors increased from \$38,000,000 in 1957 to \$40,000,000 in 1958 but this 5-p.c. expansion was appreciably less than the 36-p.c. increase experienced in 1957. It is of interest to note that Canadian air and steamship facilities accounted for more than 50 p.c. of the total receipts. In 1958, 132,000 Canadians returned direct from visits to overseas countries and 42,000 re-entered Canada via the United States.

Information reported by Canadians returning direct to Canada revealed that about 26 p.c., or 10 p.c. less than in 1957, had visited the United Kingdom, the proportion combining trips to the United Kingdom and other European countries remained unchanged at 31 p.c. and the number visiting other European countries advanced to 19 p.c. from 15 p.c. in 1957. The West Indies Federation attracted nearly 6 p.c. of Canadian overseas travellers returning direct and visits to Bermuda represented between 4 and 5 p.c. of the total as compared with 3 p.c. in 1957. Visits to Hawaii and Mexico each accounted for 4 p.c. of the total, the latter proportion remaining unchanged from 1957. Between 2 and 3 p.c. visited a combination of several areas, while about 1 p.c. travelled to Central America and the non-British West Indies. A smaller proportion visited South America, Australia and New Zealand, and other countries.

Season of the year continued to affect destinations reported by Canadians returning direct. Travel to Europe accounted for 53 p.c. of reported destinations in the first quarter of the year, 64 p.c. in the second, 89 in the third and 87 p.c. in the fourth. Visits to the United Kingdom reached a maximum of 32 p.c. in the third quarter and a minimum of 18 p.c. in the second quarter, while people combining visits to the United Kingdom and other Europe accounted for 39 p.c. of total travel in the fourth quarter. Other European countries were most popular during the second quarter of 1958, attracting 21 p.c. of all visitors. Travel to the West Indies Federation and Mexico was heaviest during the first quarter of the year, accounting for 16 p.c. and 12 p.c. of the travellers respectively, whereas visits to these areas were at a minimum during the third quarter of the year. The number of trips to Bermuda reached a peak of 9 p.c. during the second quarter, while Hawaii accounted for almost 7 p.c. of the total during the first half of 1958. It should be noted, however, that percentages of travel to the non-European countries mentioned increase when the category of Canadian re-entries via the United States is considered, since very often the shortest route to these destinations lies through that country.

Of the Canadians returning direct, approximately 44 p.c. had visited friends or relatives and 42 p.c. had sought recreation. The number travelling on business or for educational purposes accounted for 10 p.c. and about 1 p.c., respectively, while 3 p.c. reported health as a reason.

Information on Canadians returning to Canada via the United States was secured for the first time in 1958. Of the estimated 42,000 such re-entries, a larger proportion reported visits to countries which are most easily reached by travel through the United States such as Mexico, the West Indies Federation, Central America, Bermuda and Hawaii, than was reported by persons returning direct to Canada. Mexico attracted 22 p.c. compared with 4 p.c. of those returning direct, while 12 p.c. visited the West Indies Federation compared with 6 p.c. of the direct re-entries. However, a comparison of travel to European countries showed the opposite trend—only 6 p.c. of re-entries via the United States had visited the United Kingdom compared with 26 p.c. of those returning direct, 11 p.c. had visited the United Kingdom plus other European countries compared with 31 p.c., and 10 p.c. reported trips to European countries only as compared with 19 p.c. of the direct re-entries. Length of stay also showed variation, with travellers averaging five days in the United States in addition to spending 36 days in the United Kingdom, 64 days in the United Kingdom and other Europe combined and 60 days in other Europe only. Similar figures for those returning direct revealed lengths of stay averaging 55 days in the United Kingdom, 66 days in other Europe and the United Kingdom combined, and 58 days in other European countries only. Length of stay in countries easily reached by travel through the United States did not differ significantly from that recorded by residents returning direct from overseas. Recreation was the main purpose of trip for almost 59 p.c. of the Canadians re-entering via the United States and 42 p.c. of those returning direct. However, 44 p.c. of those returning direct from overseas specified visits to friends or relatives as compared with only 22 p.c. of the indirect re-entries. The percentages of the two groups reporting on other purposes of trip showed little variation. The majority of those travelling for recreation or health visited areas with warmer climates such as Hawaii and some of the more southerly Commonwealth countries, especially during the first quarter of the year when about 72 p.c. went for recreation and 12 p.c. for health.

Expenditures by Canadians in overseas countries reached a new record of \$129,000,000 in 1958. The rate of expansion has been progressively more moderate in the past few years, the 6-p.c. increase in 1958 comparing with a 14-p.c. increase in 1957. In 1957, for the first time since 1951, receipts from overseas visitors showed a greater percentage gain than the travel payments to overseas countries but in 1958 the former trend was re-established and the growth in payments exceeded that of receipts by approximately 1 p.c. As a result, the debit balance between receipts and payments in the overseas account advanced \$5,000,000 over 1957 to a new high of \$89,000,000 or 46 p.c. of Canada's total deficit on travel account in 1958.

Tourist Information.—Tourist information generally is supplied by the Canadian Government Travel Bureau, Ottawa, and detailed information on the National Parks and Historic Sites is available from the Department of Northern Affairs and National Resources, Ottawa. For advice regarding specific provinces or particular cities or resorts, application should be made to the provincial or municipal Bureau of Information concerned.

PART IV.—THE GOVERNMENT AND FOREIGN TRADE

Section 1.—Foreign Trade Service and Associated Agencies concerned with the Development of Foreign Trade*

Foreign trade contributes substantially to the welfare and prosperity of Canadians, largely because the productive capacity of Canada is greater than the ability of its population to consume the output of farms, factories, forests, fisheries and mines. Every effort is made, therefore, to establish and maintain close commercial relations with other countries whose markets are essential to the Canadian economy. It is appreciated, however, that two-way trade should be encouraged in order that goods and services may be accepted in partial payment for the products Canada is in a position to export. Furthermore,

* Prepared in the several branches concerned and collated in the Trade Publicity Branch, Department of Trade and Commerce, Ottawa. The work of the Standards Branch and the Small Business Branch of the Department, which are concerned with domestic matters only, is dealt with in the Domestic Trade Chapter, pp. 968-969.

many commodities that are not indigenous to this country must be imported. Some of these are required for industrial processes and others may be classed as consumer goods necessary for the maintenance of the Canadian standard of living.

Although many private firms have established connections in other countries that enable them to maintain a steady flow of goods in either direction, others require the assistance of government agencies in finding markets or sources of supply. Import and export controls imposed by many countries for a variety of reasons, together with postwar foreign exchange difficulties, present problems that no single firm or even an association of manufacturers, exporters or importers can solve without assistance from government representatives.

The Department of Trade and Commerce and associated agencies are at the disposal of exporters and importers engaged directly in the development of Canada's commercial relations with other countries. Services obtainable from the various branches, divisions and agencies are described below.

Agriculture and Fisheries Branch.—The main functions of this Branch include: trade promotion relating to agricultural and fisheries products; the programming, receiving and distribution of information on foreign agriculture and fisheries; acting as a focal point for liaison on agricultural and fisheries trade matters with the Department of Agriculture, the Department of Fisheries, the Canadian Wheat Board, the Board of Grain Commissioners for Canada, and other government departments and boards; and keeping abreast of developments and attending meetings of international organizations concerned with trade in agricultural products.

In the field of trade promotion, the Grain Division, the Food and Agriculture Division and the Fisheries Division assist Canadian exporters of agricultural and fisheries products in finding markets in other countries. Canadian firms are supplied with information concerning market conditions and requirements in foreign lands, competition from other sources of supply, exchange and tariff restrictions and other related information. Special surveys are made whenever necessary. Trade Commissioners are kept informed on such matters as production and price trends in Canada, quantities of commodities available for export and sources of supply. The Grain Division assists foreign governments and other buyers in the purchase of Canadian wheat, flour and other cereals. Close contact is maintained with the flour millers, as well as daily liaison with the Canadian Wheat Board. The Branch assists in organizing displays of agricultural and fisheries products in trade fairs abroad, including a specialized program of fur promotion.

Commodity Officers concerned with livestock and livestock products, plant products, confectionery, fish and fisheries products keep in contact with the trade and trade organizations dealing with these commodities. They are in close touch with the officers of other departments of government concerned with the disposition of Canadian production surplus to domestic requirements, and those responsible for such items as health standards, grading and inspection.

Much information on foreign agriculture and fisheries is received from Canadian Trade Commissioners. This material, which reflects foreign government policy, production trends and market information, is processed in the Branch and distributed to the departments of government concerned and others interested. The Trade Commissioner Service includes a number of officers who deal specifically with agricultural and fisheries matters. Some of these officers are located in Canada's most important export outlets and others in those countries with which Canada competes on world markets, particularly in such commodities as wheat, coarse grains, livestock, meats, dairy products and fisheries products.

Information received from these agricultural officers and other trade commissioners on agricultural developments in other lands is published in *Foreign Trade* and in bulletins of the Economics Division, Department of Agriculture, and is made available directly to producers and exporters. Fisheries information from abroad is passed to the Department of Fisheries, the provincial governments concerned, the Fisheries Council of Canada and to fish exporters.

Canadian Government Exhibition Commission.—The Canadian Government Exhibition Commission is responsible for the planning, organization and administration of all Canadian exhibits in fairs and exhibitions abroad, in which the Canadian Government decides to participate. In addition, the Commission endeavours to advise private exhibitors and their agents on the best means of displaying Canadian products at overseas fairs. The Commission is also responsible for any international fairs and exhibitions held in Canada, financed and sponsored by the Federal Government.

Commodities Branch.—The principal role of the Commodities Branch is active trade promotion. The Branch provides liaison with industry and the business community in Canada, and passes on information about trade opportunities brought to light by officers of the Department at home and abroad.

The Branch has commodity specialists organized in six divisions: Engineering and Equipment, Minerals and Metals, Forest Products, Chemicals, Consumer Goods, and Transportation and Trade Services. Within these divisions, individual commodity specialists are concerned with such particular groups of products as engineering services and plant equipment, electrical and electronic equipment and transportation equipment, ferrous and non-ferrous metals, lumber, pulp and paper, chemicals and petroleum products and leather and rubber, as well as a wide range of consumer products. Commodity officers visit plants, attend meetings of business associations, prepare trade studies and market surveys, and assist in arranging displays of Canadian goods abroad for the purpose of introducing them in foreign markets. Commodity specialists direct the attention of trade commissioners to changes in supply conditions and to products available for export, and also relay market news received from trade commissioners to Canadian manufacturers and exporters.

The Branch is concerned with the administration of the Export and Import Permits Act and is active in the export control field, including international arrangements for the control of strategic materials. Branch representatives attend international commodity study groups in such products as tin, rubber, cotton, lead and zinc, where major world suppliers and users of the commodity concerned meet to arrange a framework for orderly marketing and price stability in principal world markets. The Branch also acts as a source of commercial intelligence and compiles and distributes trade information essential to the operation of other branches of the Department.

Economic and Technical Assistance Branch.—This Branch administers Canadian foreign aid programs, including Canada's participation in the Colombo Plan for co-operative economic development in South and South-East Asia, the Canada-West Indies Aid Program, and the Commonwealth Technical Assistance Program, which involves the independent African States within the Commonwealth and other Commonwealth countries not included in the Colombo Plan. These programs are designed to help the peoples of less-developed countries to raise their living standards and productivity. The Canadian contribution is of two types: capital and technical assistance. Through the capital assistance program, grants of equipment and services are made to countries in the different areas on a bilateral basis. Technical assistance embraces the training in Canada of individuals from less-developed countries in a variety of fields and the provision of Canadian technical experts to advise and instruct abroad. The funds to finance the different aid programs are voted by Parliament on a yearly basis.

The Branch co-operates with the United Nations and its Specialized Agencies, as well as with the International Co-operation Administration of the United States and other international agencies in recruiting technical experts, and in arranging courses of instruction for trainees sent to Canada under their auspices.

The Branch's work also involves co-operation with a committee set up, in conjunction with the Canadian Universities Foundation, to administer the Commonwealth Fellowship and Scholarship Plan in Canada. The Branch is responsible for financial and administrative arrangements for bringing to Canadian universities candidates selected by the committee.

Energy Studies Branch.—The functions of this Branch were to follow developments *re* Canadian energy sources, prepare studies and advise on particular problems as they arose. The effect of changes in United States oil import restrictions on the Canadian oil industry, Canadian natural gas export policy, and planning and negotiation related to co-operative international development of the Columbia River basin were examples of the specific areas treated by the Branch during 1959. On Nov. 2 of that year most of the Branch functions were taken over by the new National Energy Board (see p. 1066).

Export Credits Insurance Corporation.—The Export Credits Insurance Corporation was established under the provisions of the Export Credits Insurance Act 1944 (amended in 1946, 1948, 1954, 1957 and 1959), and is administered by a Board of Directors that includes the Deputy Minister of Trade and Commerce and the Deputy Minister of Finance. It insures persons carrying on business in Canada against risks involved in the export, manufacture, treatment or distribution of goods or the rendering of engineering, construction, technical or similar services. The main risks covered include: insolvency or protracted default on the part of the buyer; exchange restrictions in the buyer's country preventing the transfer of funds to Canada; cancellation of an import licence or the imposition of restrictions on the importation of goods not previously subject to restrictions; the occurrence of war between the buyer's country and Canada, or of war, revolution, etc., in the buyer's country.

The insurance is available under three main classifications: general commodities, capital goods, and services. Coverage for general commodities may be procured by exporters under two types of policies: the Contracts Policy, which insures an exporter against loss from the time he books the order until payment is received; or the Shipments Policy, obtainable at lower rates of premium and covering the exporter from the time of shipment until payment is received. These policies are issued on a yearly basis, covering exporters' sales to all countries.

Insurance of capital goods offers protection to exporters dealing in plant equipment, heavy machinery, etc., where extended credit for lengthy periods is often necessary. Specific policies are issued for transactions involving capital goods, but the general terms and conditions are the same as those applicable to policies for general commodities. Specific policies are also issued to cover engineering, construction, technical or similar service contracts entered into between Canadian firms and persons in foreign countries who have agreed to purchase such services.

The Corporation insures exporters on a co-insurance basis up to a maximum of 85 p.c. of the gross invoice value of shipments. This co-insurance basis also operates in the distribution of recoveries obtained after payment of a loss; these recoveries are shared by the Corporation and the exporter in the proportions of 85 and 15 p.c., respectively.

Under the Export Credits Insurance Act, Sect. 21, the Corporation may be authorized to enter into certain contracts of insurance, where the Board of Directors of the Corporation is of opinion that a proposed contract of insurance would impose upon the Corporation a liability for a term or in an amount in excess of that which the Corporation would normally undertake, and in the opinion of the Minister of Trade and Commerce it is in the national interest that the proposed contract be entered into. Under Sect. 21A of the Act, the Corporation may be authorized to provide a guarantee in respect of an export transaction. Such a guarantee would be given to the financial institution lending money to the Canadian exporter to carry out the export transaction.

Industrial Development Branch.—This Branch co-ordinates the assistance offered by the Federal Government in the establishment of new industries in Canada. Acting in this capacity, information is provided on a multiplicity of matters pertaining to industry establishments. The Branch assists also in solving the variety of problems encountered by Canadian and foreign business men. It also aids those established firms that wish to expand into new lines of production. Inquiries from foreign firms and individuals regarding the manufacture of products in Canada under licence or royalty are screened and brought to the attention of Canadian manufacturers interested in producing additional items.

The Branch acts in an advisory capacity to the Immigration Branch of the Department of Citizenship and Immigration regarding the admission of individuals, other than those from Commonwealth countries, who wish to establish new industries in Canada. It also works in close co-operation with a widespread network of organizations throughout Canada, including industrial development departments of the provinces, municipalities, railways, banks, power companies, chambers of commerce, boards of trade, and the Canadian Manufacturers' Association.

International Trade Relations Branch.—The International Trade Relations Branch deals with a wide variety of current trade issues including analysis of developments in international commercial relations, assistance in maintaining and further improving the access for Canadian goods in foreign markets. The Branch endeavours to find practical solutions for tariffs and other difficulties encountered by Canadian exporters. It has under constant review Canada's trading relations with other countries, and participates in conferences and negotiations under the General Agreement on Tariffs and Trade. In addition, the Branch is concerned with work being done in the trade field by other international organizations.

The Branch has a major responsibility for the administration of Canada's existing trade agreements and is responsible for the preparation of material for trade and tariff negotiations with other countries. Information is maintained on foreign tariffs, customs legislation, taxes affecting trade, import licencing, exchange regulations, documentation, sanitary regulations, marking and labelling requirements, and measures pertaining to quotas, embargoes, and other import restrictions. This information is made available to exporters, government officials, and others interested in these regulations, as they affect Canadian export trade. The assistance of the Branch is available to exporters in dealing with difficulties resulting from the trade policies or regulations of other countries.

Trade Publicity Branch.—The principal function of the Trade Publicity Branch is to promote trade between Canada and other countries in the publicity field. It furnishes the commercial community of Canada with information concerning the assistance that exporters and importers may obtain from the Department of Trade and Commerce. The Branch is responsible also for stimulating a better appreciation by the general public of the importance of trade to the welfare of Canada. The attention of exporters and potential exporters is directed to opportunities for the disposal of their products in markets abroad, and of importers to sources of supply for raw materials and consumer goods unobtainable in Canada.

Its principal information medium is *Foreign Trade*, fortnightly publication of the Foreign Trade Service, in which are reproduced reports of Canadian trade commissioners on conditions in their respective territories, articles by Head Office personnel, commodity notes, foreign exchange rates, the itineraries of trade commissioners on tour in Canada, and trade and tariff regulations. A list of trade offices throughout the world is published once a month, and a directory of Head Office at periodic intervals.

Press releases are prepared and distributed to newspapers at home, and material of a similar character is dispatched to Canadian trade commissioners for distribution to newspapers abroad. Pamphlets and brochures are prepared to supplement other information on foreign markets, sources of supply, documentation, regulations and trade

restrictions. Assistance is rendered to correspondents of newspapers and periodicals at home and abroad in the preparation of articles pertaining to various phases of Canada's foreign trade. The promotional work of this Branch is supported by moderate advertising at home and abroad through the daily press, periodicals and trade papers, and by films and radio.

Trade promotion, through the medium of trade fairs in other lands, is the responsibility of a Division in this Branch, which maintains close liaison with other branches of the Department and agencies of government, and prepares information for consideration by the Committee on Trade Fairs Abroad.

Trade Commissioner Service.—The Trade Commissioner Service is an important instrument in the continuous effort to increase Canadian international trade, to promote world-wide distribution of Canadian products and to locate the best sources of supply for imports. Headquarters are at Ottawa, and 63 offices are maintained in 48 countries, staffed with trained Canadian trade officials and commodity specialists.

Trade commissioners bring together exporters and importers of Canada and other countries. They study potential markets for specific Canadian products and report on the exact kinds of goods in demand, prices, competitive conditions, trade and exchange regulations, tariffs, shipping and packaging requirements, labelling, etc. Inquiries for Canadian goods are forwarded to the Department at Ottawa or directly to interested Canadian firms. For Canadian importers, trade commissioners seek sources of supply of a wide variety of goods. The preparation of economic and other reports for departmental use is an important activity. Assistance is given to Canadian exhibitors at overseas trade fairs and constant liaison is maintained with the trade departments of foreign governments.

In countries where Canada maintains a diplomatic mission and a trade office, trade commissioners form an integral part of the mission and assume the title of Minister (Commercial), Commercial Counsellor or Commercial Secretary depending upon their rank as Foreign Service Officers. In some foreign countries they act as Consuls General, Consuls or Vice-Consuls according to their status.

In order to provide Canadian manufacturers, exporters and importers with up-to-date information concerning overseas territories more effectively than is possible by correspondence, trade commissioners make tours of Canadian industrial and commercial centres after each period of duty abroad. Such direct contacts enable specific problems to be discussed and at the same time serve to bring into focus for the trade commissioner the Canadian business picture as a whole.

CANADIAN FOREIGN TRADE OFFICES ABROAD, AS AT JULY 1, 1960

ARGENTINA.—Commercial Counsellor, Canadian Embassy, Bartolome Mitre 478, Buenos Aires.

AUSTRALIA.—

Canberra: Commercial Secretary, Canadian Embassy, State Circle, Canberra.

Melbourne: Commercial Counsellor, 83 William Street, Melbourne.

Sydney: Commercial Counsellor, 7th Floor, Berger House, 82 Elizabeth Street, Sydney, N.S.W.

AUSTRIA.—Commercial Counsellor, Opernringhof, Opernring 1, Vienna 1. Territory includes Bulgaria, Czechoslovakia, Hungary, Romania and Yugoslavia.

BELGIAN CONGO.—Canadian Government Trade Commissioner, Forescom Bldg., Leopoldville 1. Territory includes Angola, Central African Republic, Chad, Congo, Gabon.

BELGIUM.—Commercial Counsellor, Canadian Embassy, 35 rue de la Science, Brussels. Territory includes Luxembourg.

BRAZIL.—

Rio de Janeiro: Commercial Secretary, Canadian Embassy, Edifício Metropole, Av. Presidente Wilson 165, Rio de Janeiro.

São Paulo: Consul and Trade Commissioner, Canadian Consulate, Edifício Alois, Rua 7 de Abril 252, São Paulo.

- CEYLON.—Commercial Secretary, Office of the High Commissioner for Canada, 6 Gregory's Road, Cinnamon Gardens, Colombo.
- CHILE.—Commercial Secretary, Canadian Embassy, 6th Floor, Av. General Bulnes, 129, Santiago.
- COLOMBIA.—Commercial Secretary and Consul, Canadian Embassy, Edificio Banco de Los Andes, Carrera 10, No. 16-92, Bogota. Territory includes Ecuador.
- CUBA.—Commercial Secretary, Canadian Embassy, Edificio Ambar Motors, Avenida Menocal 16, Havana.
- DENMARK.—Commercial Counsellor, Canadian Embassy, Prinsesse Maries Allé 2, Copenhagen. Territory includes Greenland and Poland.
- DOMINICAN REPUBLIC.—Commercial Counsellor, Canadian Embassy, Edificio Copello 408, Calle El Conde, Ciudad Trujillo. Territory includes Puerto Rico.
- FRANCE.—Commercial Counsellor, Canadian Embassy, 35 Ave. Montaigne, Paris 8°. Territory includes Algeria, Cameroon Republic, Dahomey, Federation of Mali, Guinea, Ivory Coast, Mauretania, Morocco, Niger, Togoland, Tunisia and Volta.
- GERMANY.—
Bonn: Commercial Counsellor, Canadian Embassy, 22 Zitellmannstrasse, Bonn.
Hamburg: Consul, Canadian Consulate, 69 Ferdinandstrasse, Hamburg.
- GHANA.—Commercial Counsellor, Office of the High Commissioner for Canada, E115/3 Independence Ave., Accra. Territory includes Gambia, Liberia and Sierra Leone.
- GREECE.—Commercial Counsellor, Canadian Embassy, 31 Vassilissis Sophias Ave., Athens. Territory includes Israel and Turkey.
- GUATEMALA.—Canadian Government Trade Commissioner, 5 Avenida, 10-68, Zone I, Guatemala City. Territory includes Costa Rica, El Salvador, Honduras, Nicaragua, Panama and Canal Zone.
- HAITI.—Chargé d'Affaires *ad interim* and Consul, Canadian Embassy, Route du Canape Vert, St. Louis de Turgeau, Port au Prince.
- HONG KONG.—Canadian Government Trade Commissioner, Hong Kong and Shanghai Banking Corporation Bldg., Hong Kong. Territory includes Cambodia, Communist China, Laos, Viet Nam, Macao.
- INDIA.—
New Delhi: Commercial Secretary, Office of the High Commissioner for Canada, 13 Golf Links Area, New Delhi.
Bombay: Canadian Government Trade Commissioner, Gresham Assurance House, Mint Road, Bombay.
- INDONESIA.—Commercial Secretary, Canadian Embassy, Djl. Budi Kemuliaan No. 6, Djakarta.
- IRAN.—Commercial Counsellor, Canadian Legation, Teheran.
- IRELAND.—Commercial Secretary for Canada, 66 Upper O'Connell St., Dublin.
- ITALY.—Commercial Counsellor, Canadian Embassy, Via G. B. de Rossi 27, Rome. Territory includes Libya and Malta.
- JAPAN.—Commercial Counsellor, Canadian Embassy, Tokyo. Territory includes South Korea.
- LEBANON.—Commercial Secretary, Canadian Embassy, Alpha Building, Rue Clemenceau, Beirut. Territory includes Iraq, Jordan, Persian Gulf Area and Syrian region of the United Arab Republic.
- MEXICO.—Commercial Secretary, Canadian Embassy, Melchor Ocampo 463, 7th Floor, Mexico 5, D.F.
- NETHERLANDS.—Commercial Counsellor, Canadian Embassy, Sophialaan 5-7, The Hague.
- NEW ZEALAND.—Commercial Secretary, Office of the High Commissioner for Canada, Government Life Insurance Bldg., Wellington. Territory includes Fiji, Western Samoa and French Oceania.
- NIGERIA.—Commercial Counsellor, 40 Marina St., Ikoyi, Lagos. Address for letters: P.O. Box 851.

- NORWAY.**—Commercial Counsellor, Canadian Embassy, Fridtjof Nansens Plass 5, Oslo. Territory includes Iceland.
- PAKISTAN.**—Commercial Secretary, Office of the High Commissioner for Canada, Hotel Metropole, Victoria Road, Karachi. Territory includes Afghanistan.
- PERU.**—Commercial Secretary, Canadian Embassy, Edificio Boza, Carabaya 831, Plaza San Martin, Lima. Territory includes Bolivia.
- PHILIPPINES.**—Consul General and Trade Commissioner, Canadian Consulate General, Ayala Bldg., Juan Luna Street, Manila. Territory includes Republic of China (Taiwan).
- PORTUGAL.**—Commercial Counsellor, Canadian Embassy, Rua Marques de Fronteira, No. 8-4° D°, Lisbon. Territory includes Azores, Cape Verde Islands, Madeira and Portuguese Guinea.
- RHODESIA AND NYASALAND, FEDERATION OF.**—Canadian Government Trade Commissioner, 8th Floor, Grindlays Bank Chambers, Baker Avenue, Salisbury. Territory includes Kenya, Seychelles Islands, Tanganyika, Uganda and Zanzibar.
- SINGAPORE.**—Canadian Government Trade Commissioner, Rooms 4, 5 and 6, American International Bldg., Robinson Road and Telegraph St., Singapore. Territory includes Brunei, Burma, Federation of Malaya, North Borneo, Sarawak and Thailand.
- SOUTH AFRICA.**—
Johannesburg: Canadian Government Trade Commissioner, Mutual Building, Harrison Street, Johannesburg.
Cape Town: Canadian Government Trade Commissioner, 602 Norwich House, The Foreshore, Cape Town.
- SPAIN.**—Commercial Counsellor, Canadian Embassy, Edificio España, Avenida de Jose Antonio 88, Madrid. Territory includes Balearic Islands, Canary Islands, Gibraltar, Rio Muni and Rio de Oro.
- SWEDEN.**—Commercial Counsellor, Canadian Embassy, Strandvagen, 7-C, Stockholm. Territory includes Finland.
- SWITZERLAND.**—Commercial Counsellor, Canadian Embassy, Kirchenfeldstrasse 88, Berne.
- UNION OF SOVIET SOCIALIST REPUBLICS.**—Commercial Counsellor, Canadian Embassy, 23 Starokonyushenny Pereulok, Moscow.
- UNITED ARAB REPUBLIC EGYPTIAN REGION.**—Commercial Counsellor, Canadian Embassy, 6 Sharia Rouston Pasha, Garden City, Cairo. Territory includes Aden, Sudan, Cyprus, Ethiopia, Saudi Arabia and Yemen.
- UNITED KINGDOM.**—
London: Minister (Commercial), Office of the High Commissioner for Canada, Canada House, Trafalgar Square, London.
Liverpool: Canadian Government Trade Commissioner, Martins Bank Building, Water Street, Liverpool.
Glasgow: Canadian Government Trade Commissioner, Cornhill House, 144 West George Street, Glasgow.
Belfast: Canadian Government Trade Commissioner, 36 Victoria Square, Belfast.
- UNITED STATES.**—
Washington: Minister-Counsellor (Economic), Canadian Embassy, 1746 Massachusetts Ave., N.W., Washington.
New York City: Deputy Consul General (Commercial), Canadian Consulate General, 680 Fifth Ave., New York City.
Boston: Consul and Trade Commissioner, Canadian Consulate General, 532 Little Building, 80 Boylston Street, Boston.
Chicago: Consul and Trade Commissioner, Canadian Consulate General, 111 North Wabash Avenue, Chicago.
Detroit: Consul and Trade Commissioner, Canadian Consulate, 1139 Penobscot Building, Detroit.
Los Angeles: Consul and Trade Commissioner, Canadian Consulate General, 510 West Sixth Street, Los Angeles.
New Orleans: Consul and Trade Commissioner, Canadian Consulate General, 215-217 International Trade Mart, New Orleans.
San Francisco: Consul General, Canadian Consulate General, 3rd Floor, Kohl Building, 400 Montgomery Street, San Francisco.
Seattle: Consul General, Canadian Consulate General, The Tower Building, Seventh Avenue at Olive Way, Seattle.

URUGUAY.—Commercial Counsellor, Canadian Embassy, No. 1409 Avenida Agraciada, Piso 7°, Montevideo. Territory includes Paraguay and Falkland Islands.

VENEZUELA.—Commercial Counsellor, Canadian Embassy, Edificio Pan American, Avenida Urdaneta, Puente Urapal, Candelaria, Caracas. Territory includes Netherlands Antilles.

WEST INDIES.—

Port-of-Spain: Commissioner for Canada, Colonial Building, Port-of-Spain.

Kingston: Canadian Government Trade Commissioner, Barclays Bank Building, King Street, Kingston.

Section 2.—The National Energy Board

The National Energy Board was established by the National Energy Board Act 1959 for the broad purpose of assuring the best use of energy resources in Canada. The Board is responsible for the regulation in the public interest of the construction and operation of oil and gas pipelines subject to the jurisdiction of the Parliament of Canada, the tolls charged for transmission by such pipelines, the export and import of gas, the export of electric power and the construction of those lines over which such power is exported. The Board is also required to study and keep under review all matters relating to energy within the jurisdiction of the Parliament of Canada and to recommend such measures as it considers necessary or advisable in the public interest with regard to such matters. The Act also authorizes the extension of the export and import provisions to oil upon proclamation by the Governor in Council. The Board, which reports to the Minister of Trade and Commerce, consists of a Chairman, a Vice-Chairman and three other Members.

The Act was given Royal Assent on July 18, 1959, the Members were appointed by Order in Council on Aug. 10, 1959 and the Act came into force by proclamation on Nov. 2, 1959. The Act supersedes the Pipe Lines Act, formerly administered by the Board of Transport Commissioners for Canada, and the Exportation of Power and Fluids and Importation of Gas Act, formerly administered by the Standards Branch of the Department of Trade and Commerce. Provision was made in the new Act for the continuation or re-definition of authorizations issued under the two previous Acts, and in 1960 the Act was amended to extend the duration of licences to export power issued under the Exportation of Power and Fluids and Importation of Gas Act to give the National Energy Board additional time to hear applications for replacement licences.

In the interval between passage of the Act and its coming into force, the Board commenced organizing its staff and facilities, prepared its rules of practice and procedure and drafted for submission to the Governor in Council regulations relating to the export of gas and electricity. Such regulations, and the rules of practice and procedure, came into force concurrently with the proclamation of the Act on Nov. 2, 1959.

At the time of coming into force of the Act, there existed a substantial backlog of projects for the export of gas and for the construction of pipeline facilities to export such gas, which had accumulated during the period in which the Royal Commission on Energy was conducting its investigations and the subsequent period prior to the proclamation of the National Energy Board Act. Consequently, as soon as the Act was proclaimed, six applications for licences to export gas and four applications for certificates of public convenience and necessity respecting related pipeline facilities were made to the Board. At its first hearings commencing Jan. 5, 1960, the Board heard jointly these applications, namely:—

- (1) Trans-Canada Pipe Lines Limited for certificates of public convenience and necessity under Part III and for licences under Part VI of the Act;
- (2) Alberta and Southern Gas Co. Ltd., for a licence under Part VI of the Act;
- (3) Alberta Natural Gas Company for a certificate of public convenience and necessity under Part III of the Act;
- (4) Canadian-Montana Pipe Line Company for a certificate of public convenience and necessity under Part III and a licence under Part VI of the Act;
- (5) Westcoast Transmission Company Limited for a licence under Part VI of the Act; and
- (6) Niagara Gas Transmission Limited for a certificate of public convenience and necessity under Part III and a licence under Part VI of the Act.

Following its first report, issued in March 1960, the Board with the approval of the Governor in Council issued the licences and certificates referred to in items (1) to (5) and denied the application of Niagara Gas Transmission Limited. This company subsequently made a new application, which was approved following a public hearing in May. Also in May the Board heard applications for new licences in respect of previously established gas exports from Canadian-Montana Pipe Line Company and Gordon M. Plotke; these were approved in June. To Sept. 1, 1960, the only other gas export application before the Board was an application by Texaco Exploration Company to export certain quantities of butane through the Trans Mountain oil pipeline for a short period in 1960 and 1961. This application was also approved.

In considering an application for a gas export licence, the Board is required to satisfy itself that the quantity of gas to be exported does not exceed the surplus remaining after due allowance has been made for the reasonably foreseeable requirements for use in Canada having regard to the trends in the discovery of gas in Canada, and that the price to be charged by an applicant for gas exported by him is just and reasonable in relation to the public interest. Before the Board could dispose of any of these gas export licence applications, it had therefore to estimate the actual and prospective reserves of gas in Canada and the probable demand in Canada for gas, in order to arrive at an estimate of the surplus available for export. Then the Board must examine the economics of each project in detail.

In respect of oil pipelines the only application heard by the Board was that of Inter-provincial Oil Pipe Line Company for a certificate authorizing the construction of certain new pump stations and additional pumping capacity at existing stations on its pipeline. This application was heard in May and approved in June.

Under the transitional provisions of the Act, licences for the export of power issued under the Exportation of Power and Fluids and Importation of Gas Act are deemed to have been issued under the National Energy Board Act. By the amendment to the National Energy Board Act previously mentioned, such licences, which would normally have expired on Mar. 31, 1960 were extended to Dec. 31, 1961 unless replaced before that time by a licence under the new Act. In order to deal promptly with the gas export applications awaiting its attention, the Board necessarily deferred hearings on the electric power applications, which involve some 10 licensees across Canada, and is arranging hearings to deal with them at intervals from October 1960 through March 1961.

As part of the transition from the old statutes to the new, the Board is required to issue certificates of public convenience and necessity to oil and gas pipeline companies which had received from the Board of Transport Commissioners for Canada leave to construct facilities under the Pipe Lines Act. The issuance of such certificates is proceeding as the facilities built or authorized are defined in each case.

Leave of the Board is required under Sect. 76 of the Act before a pipeline under its jurisdiction can be carried across certain utilities, and is also required under Sect. 77 before a highway, private road, railway, irrigation ditch, drain, telegraph or telephone line or a line for the transmission of hydrocarbons, power or any other substance may be carried across a pipeline. To Sept. 1, 1960, the Board had issued 103 orders in respect of such crossings.

In respect of its advisory functions, the Board early in its activities made arrangements for a co-operative study of Canada's energy requirements. Under these arrangements the Dominion Coal Board undertook in close association with the Board to carry out a historical study of the uses of energy in Canada from 1945 to 1958 and to estimate the probable uses of different forms of energy in the various provinces of Canada for the years 1965, 1975 and 1985. A forecast of the use of gas was carried out by staff lent to the Board from the Department of Trade and Commerce, in co-operation with officials from the Department of Mines and Technical Surveys. Consultations on the improvement of statistics relating to energy were held with officials of the Dominion Bureau of Statistics, which will continue to be the principal source of such statistics, with the Board co-operating in and supplementing the work of the Bureau as may be agreed from time to time.

No regulatory action had been required of the Board to Sept. 1, 1960 in regard to traffic, tolls and tariffs of pipelines under its jurisdiction. The Board is continuing the preparation, commenced by the Board of Transport Commissioners for Canada, of a uniform system of accounts applicable to gas pipeline transmission companies, and the oil pipeline companies affected are continuing to apply the uniform system of accounts for such companies developed by the Board of Transport Commissioners.

Section 3.—The Development of Tariffs

Limitations of space in the Year Book have made it necessary, in regard to tariffs, to adopt the policy of confining any detail regarding commodities and countries to tariff relationships in force at present and to summarize as much as possible historical data and details of preceding tariffs, giving references to those editions of the Year Book where extended treatments may be found.

Subsection 1.—The Canadian Tariff Structure*

The Canadian Tariff consists, in the main, of three sets of tariff rates—British Preferential, Most-Favoured-Nation, and General.

British Preferential Tariff rates are, with some exceptions, the lowest rates. They are applied to imported commodities from British countries, with the exception of Hong Kong, when conveyed without trans-shipment from a port of any British country enjoying the benefits of the British Preferential Tariff into a sea, lake or river port of Canada. Some Commonwealth countries have trade agreements with Canada which provide for rates of duty, on certain specified goods, lower than the British Preferential rates.

Most-Favoured-Nation rates are usually higher than the British Preferential rates and lower than the General Tariff rates. They are applied to commodities imported from countries with which Canada has trade agreements. These rates would apply to British countries when they are lower than the British Preferential Tariff rates. The most important trade agreement concerning the effective rates applied to goods imported from countries entitled to Most-Favoured-Nation rates is the General Agreement on Tariffs and Trade (GATT).

General Tariff rates are applied to goods imported from the few countries with which Canada has not made trade agreements.

There are numerous goods which are duty free under the British Preferential Tariff, or under both the British Preferential and Most-Favoured-Nation Tariff, or under all Tariffs.

Valuation.—In general, the Customs Act, as amended effective Sept. 6, 1958, provides that the value for duty of imported goods shall be the fair market value of like goods as established in the home market of the exporter at the time when and place from which the goods are shipped directly to Canada when sold "(a) to purchasers located at that place with whom the vendor deals at arm's length and who are at the same or substantially the same trade level as the importer, and (b) in the same or substantially the same quantities for home consumption in the ordinary course of trade under competitive conditions". In cases where like goods are not sold for home consumption but similar goods are sold, the value for duty shall be the cost of production of the goods imported plus an amount for gross profit at least equal in percentage to that earned on the sale of similar goods in the country of export. The value for duty may, in no case, be less than the amount for which the goods were sold to the purchaser in Canada, exclusive of all charges thereon after their shipment from the country of export. Internal taxes in the country of export (when not incurred on exported goods), the cost of shipping goods to Canada and similar charges, do not normally form part of the value for duty. There are, of course, further provisions for determining value for duty under the Act.

* Information relating to rate of duty and value for duty is available from the Department of National Revenue, Customs and Excise Division, which administers the Customs Act and the Customs Tariff Act.

Dumping.—Sect. 6 of the Customs Tariff provides that when the actual selling price of goods being imported is less than the fair market value and the goods are of a class or kind made or produced in Canada, a special or dumping duty shall be collected. This duty is to be equal to the difference between the actual selling price and the fair market value of the goods, except that it may not be more than 50 p.c. ad valorem. These provisions are designed to offset the advantage foreign exporters may achieve by exporting to Canada at less than the going prices.

Drawback.—There are provisions in the Customs and Excise Tax Acts for the repayment of a portion of the duty, sales and/or excise taxes paid on imported goods used in the manufacture of products later exported. The purpose of these drawbacks (as these repayments are called) is to assist Canadian manufacturers to compete in foreign markets with foreign producers of similar goods. A second class of drawback, known as "home consumption" drawbacks, is provided for under the Customs Tariff Act and applies to imported materials and/or parts used in the production of specified goods to be consumed in Canada.

The Tariff Board.—The organization and functions of the Tariff Board are described at p. 132 of this volume.

Subsection 2.—Tariff and Trade Arrangements with Other Countries as at Feb. 15, 1960

Canada's tariff arrangements with other countries fall into three main categories: trade agreements with a number of Commonwealth countries; the General Agreement on Tariffs and Trade (GATT); and other agreements and arrangements.

The Commonwealth countries with which Canada has trade agreements are as follows: Australia, British West Indies, New Zealand, Federation of Rhodesia and Nyasaland, Union of South Africa and the United Kingdom and Colonies. Preferences are accorded by Canada to India and Pakistan. Tariff relations between Canada and Ceylon, Ghana and the Federation of Malaya are governed by the Canada-United Kingdom agreement. These agreements and arrangements have been modified and supplemented by GATT.

Canada exchanges most-favoured-nation treatment with 36 countries under the General Agreement on Tariffs and Trade. These countries are listed in the following statement. In addition, six countries participate in the work of GATT as provisional members—Cambodia, Israel, Poland, Tunisia, Switzerland and Yugoslavia. The protocol of Provisional Application of the General Agreement on Tariffs and Trade was signed by Canada on Oct. 30, 1947 and brought the Agreement provisionally into force on Jan. 1, 1948.

GATT is a multilateral trade agreement providing for scheduled tariff concessions and the exchange of most-favoured-nation treatment among the contracting parties and laying down rules and regulations to govern the conduct of international trade. Under the system of multilateral tariff negotiations initiated under GATT, four general rounds of negotiations have taken place: at Geneva, Switzerland, in 1947; at Annecy, France, in 1949; at Torquay, England, in 1950-51; and again at Geneva in 1955-56. The tariff concessions Canada granted and received at the first Geneva Conference are described in the 1948-49 Year Book, pp. 875-877, and those negotiated at Annecy are discussed in the 1950 Year Book, pp. 968-970. The Torquay negotiations are discussed in the 1952-53 edition, pp. 996-997. The existing tariff concessions remain in force until Jan. 1, 1961 and thereafter unless modified in accordance with the terms of the Agreement.

Canada already had most-favoured-nation trade agreements with a number of GATT members prior to the effective date of the General Agreement. These agreements with individual countries continue in force in conjunction with the General Agreement. As an exception, however, the Canada-U.S. Trade Agreement of 1938 is suspended for as long as both countries continue to be contracting parties to GATT.

Other arrangements include a trade agreement with the Republic of Ireland, exchanging preferences, and most-favoured-nation agreements, and other arrangements of a less formal nature, with many countries not contracting parties to GATT.

**Tariff and Trade Arrangements with Commonwealth Countries as at
Feb. 15, 1960**

Country	Agreement	Principal Terms
AUSTRALIA.....	Trade Agreement signed July 8, 1931; in force Aug. 3, 1931.* GATT effective Jan. 1, 1948.	Agreement includes schedules of tariff rates and exchange of British preferential rates on items not scheduled. May be terminated on six months notice.
BRITISH WEST INDIES (BAHAMAS, BARBADOS, JAMAICA, LEEWARD AND WINDWARD ISLANDS, TRINIDAD AND TOBAGO), BERMUDA, BRITISH GUIANA, AND BRITISH HONDURAS.	Trade Agreement signed July 6, 1925, in force Apr. 30, 1927; Canadian notice of termination of Nov. 23, 1938, was replaced by notice of Dec. 27, 1939, which continued the Agreement. The British West Indies (except Jamaica), Bermuda, British Guiana and British Honduras participate in GATT.	The parties exchange specified tariff preferences. Agreement may be terminated on six months notice.
CEYLON.....	Relations continue to be governed by the Trade Agreement of 1937 between Canada and the United Kingdom. GATT effective July 29, 1948.	Canada and Ceylon exchange preferential tariff treatment.
GHANA.....	Relations continue to be governed by the Trade Agreement of 1937 between Canada and the United Kingdom. GATT effective Oct. 18, 1957.	Canada grants Ghana the British preferential rates, except on cocoa beans.
INDIA.....	Since 1897 Canada has unilaterally accorded British preferential treatment to India but without contractual obligation. GATT effective July 8, 1948.	In addition to preferences granted to India, most-favoured-nation treatment is exchanged under GATT.
MALAYA, FEDERATION OF...	Relations continue to be governed by the Trade Agreement of 1937 between Canada and the United Kingdom. GATT effective Oct. 24, 1957.	Canada grants Malaya British preferential rates in return for such preferences as exist in the Malayan tariff.
NEW ZEALAND.....	Trade Agreement signed Apr. 23, 1932; in force May 24, 1932. GATT effective July 26, 1948.	The parties exchange specific preferences on scheduled goods and reciprocally concede British preferential rates on items not scheduled. May be terminated on six months notice.
PAKISTAN.....	Canada unilaterally accords Pakistan British preferential treatment but without contractual obligation. GATT effective July 30, 1948.	In addition to preferences granted to Pakistan, most-favoured-nation treatment is exchanged under GATT.
RHODESIA AND NYASALAND, FEDERATION OF.	Trade Agreement signed Feb. 6, 1958; in force Feb. 7, 1958. GATT effective in Southern Rhodesia May 19, 1948; extended to whole Federation, Oct. 29, 1954.	Canada exchanges preferential tariffs with the Federation.

*New agreement signed Feb. 12, 1960 to come force when ratified by both governments.

**Tariff and Trade Arrangements with Commonwealth Countries as at
Feb. 15, 1960—concluded**

Country	Agreement	Principal Terms
UNION OF SOUTH AFRICA...	Trade Agreement signed Aug. 20, 1932; in force Oct. 13, 1932. Exchange of notes Aug. 2-31, 1935; effective retroactive from July 1, 1935. GATT effective June 14, 1948.	Agreement includes schedules of tariff preferences granted by each country. May be terminated on six months notice. Exchange of most-favoured-nation treatment. May be terminated on six months notice.
UNITED KINGDOM.....	Trade Agreement signed Feb. 23, 1937; in force Sept. 1, 1937. Modified by an exchange of letters of Nov. 16, 1938, and an exchange of notes Oct. 30, 1947. GATT effective Jan. 1, 1948.	Various concessions by both countries including exchange of preferential tariff rates (some minor reservations by Canada). Extends to colonies.
WEST INDIES, FEDERATION OF THE (TRINIDAD, JAMAICA, BARBADOS, LEEWARD AND WINDWARD ISLANDS).	Trade relations continue to be governed by the Canada-British West Indies Agreement (see p. 1070).	

**Tariff and Trade Arrangements with Non-Commonwealth Countries as at
Feb. 15, 1960**

Country	Agreement	Principal Terms
ARGENTINA.....	Trade Agreement signed Oct. 2, 1941; provisionally in force Nov. 15, 1941.	Exchange of most-favoured-nation treatment. Provisional application may be terminated on three months notice.
AUSTRIA.....	GATT effective Oct. 19, 1951.	Exchange of most-favoured-nation treatment.
BELGIUM-LUXEMBOURG....	Convention of Commerce with Belgium-Luxembourg Economic Union (including Belgian colonies) entered into effect Oct. 22, 1924. GATT effective Jan. 1, 1948.	Exchange of most-favoured-nation treatment. May be terminated on one years notice.
BOLIVIA.....	Order in Council of July 20, 1935, accepted Article 15 of the United Kingdom-Bolivia Treaty of Commerce of Aug. 1, 1911.	Exchange of most-favoured-nation treatment. May be terminated on one years notice.
BRAZIL.....	Trade Agreement signed Oct. 17, 1941; provisionally in force from date of signing and definitively on Apr. 16, 1943. GATT effective July 31, 1948.	Exchange of most-favoured-nation treatment. May be terminated on six months notice.
BURMA.....	GATT effective July 29, 1948.	Exchange of most-favoured-nation treatment.

**Tariff and Trade Arrangements with Non-Commonwealth Countries as at
Feb. 15, 1960—continued**

Country	Agreement	Principal Terms
CAMBODIA.....	Franco-Canadian Trade Agreement of 1933 applied to Cambodia.	Since the creation of Cambodia as an independent State in 1955, Canada has continued to grant most-favoured-nation rates.
CHILE.....	Trade Agreement signed Sept. 10, 1941; provisionally in force Oct. 15, 1941, and definitively on Oct. 29, 1943. GATT effective Mar. 16, 1948.	Exchange of most-favoured-nation treatment. May be terminated on six months notice.
CHINA.....	<i>Modus vivendi</i> signed Sept. 26, 1946; in effect since Sept. 28, 1946.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
COLOMBIA.....	Treaty of Commerce with United Kingdom of Feb. 16, 1866, applies to Canada. Modified by protocol of Aug. 20, 1912, and exchange of notes Dec. 30, 1938. A Trade Agreement between Colombia and Canada was signed Feb. 20, 1946, but has not been put into force.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
COSTA RICA.....	<i>Modus vivendi</i> signed Nov. 18, 1950; brought into force Jan. 26, 1951.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
CUBA.....	GATT effective Jan. 1, 1948.	Exchange of most-favoured-nation treatment (excluding preferences accorded by Cuba to the United States).
CZECHOSLOVAKIA.....	Convention of Commerce signed Mar. 15, 1928; in force Nov. 14, 1928. GATT effective May 21, 1948.	Exchange of most-favoured-nation treatment. May be terminated on one years notice.
DENMARK (including GREENLAND).	Treaties of Peace and Commerce with United Kingdom of Feb. 13, 1660 and July 11, 1670, apply to Canada. GATT effective May 28, 1950.	Exchange of most-favoured-nation treatment. Declaration of May 9, 1912 provides means for separate termination by Dominions on one years notice.
DOMINICAN REPUBLIC.....	Trade Agreement signed Mar. 8, 1940; in force provisionally Mar. 15, 1940, and definitively Jan. 22, 1941. GATT effective May 19, 1950.	Exchange of most-favoured-nation treatment including scheduled concessions. May be terminated on six months notice.
ECUADOR.....	<i>Modus vivendi</i> signed Nov. 10, 1950; in force Dec. 1, 1950.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
EGYPT (REGION of UNITED ARAB REPUBLIC).	Exchange of notes Nov. 26 and Dec. 3, 1952; in force Dec. 3, 1952.	Exchange of most-favoured-nation rates. May be terminated on six months notice.
EL SALVADOR.....	Exchange of notes of Nov. 2, 1937; in force Nov. 17, 1937.	Exchange of most-favoured-nation treatment. May be terminated on four months notice.

**Tariff and Trade Arrangements with Non-Commonwealth Countries as at
Feb. 15, 1960—continued**

Country	Agreement	Principal Terms
ETHIOPIA.....	Exchange of notes effective June 3, 1955.	Exchange of most-favoured-nation treatment.
FINLAND.....	Exchange of notes of Nov. 13-17, 1948; effective Nov. 17, 1948. GATT effective May 25, 1950.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
FRANCE AND FRENCH OVER-SEAS TERRITORIES.	Trade Agreement signed May 12, 1933; in force June 10, 1933. Exchange of notes of Sept. 29, 1934, and additional protocol of Feb. 26, 1935. GATT effective Jan. 1, 1948.	Exchange of most-favoured-nation treatment including scheduled concessions. May be terminated on three months notice.
GERMANY, FEDERAL REPUBLIC OF.	GATT effective Oct. 1, 1951.	Exchange of most-favoured-nation treatment.
GREECE.....	<i>Modus vivendi</i> by exchange of notes of July 24-28, 1947; effective Aug. 28, 1947. GATT effective Mar. 1, 1950.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
GREENLAND.....	(See Denmark).	
GUATEMALA.....	Trade Agreement signed Sept. 28, 1937; in force Jan. 14, 1939.	Exchange of most-favoured-nation treatment. May be terminated on six months notice.
GUINEA.....	As former French territory, participated in GATT.	Since creation of Guinea as an independent State in 1959, GATT members agree to continue to accord most-favoured-nation treatment for a period of two years.
HAITI.....	Trade Agreement signed Apr. 23, 1937; in force Jan. 10, 1939. GATT effective Jan. 1, 1950.	Exchange of most-favoured-nation treatment. May be terminated on six months notice.
HONDURAS.....	Exchange of notes signed July 11, 1956, effective July 18, 1956. Ratified in Honduras Sept. 5, 1956.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
ICELAND.....	Although there is no contractual obligation, Canada and Iceland adhere to the terms of a treaty originally concluded between Denmark and the United Kingdom on Feb. 13, 1660.	Exchange of most-favoured-nation treatment.
INDONESIA.....	GATT effective Mar. 1, 1948.	Exchange of most-favoured-nation treatment.
IRAN.....	Special arrangement by Order in Council effective Feb. 1, 1951.	Canada grants most-favoured-nation tariff rates as long as Iran accords reciprocal treatment.
IRAQ.....	Special arrangement by Order in Council effective Sept. 15, 1951.	Canada grants and receives most-favoured-nation tariff rates.

**Tariff and Trade Arrangements with Non-Commonwealth Countries as at
Feb. 15, 1960—continued**

Country	Agreement	Principal Terms
IRELAND.....	Trade Agreement signed Aug. 20, 1932; in force Jan. 2, 1933.	Canada grants British preferential tariff in return for preferential rates where such exist and for most-favoured-nation rates on non-preferential items. May be terminated on six months notice.
ISRAEL.....	Canada-United Kingdom Agreement of 1937 applied under the British Palestine Mandate.	Since the creation of the State of Israel in May 1948, Canada has continued to grant most-favoured-nation rates.
ITALY.....	<i>Modus vivendi</i> by exchange of notes of Apr. 23-28, 1948; effective Apr. 28, 1948. GATT effective Jan. 1, 1950.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
JAPAN.....	Agreement on Commerce signed Mar. 31, 1954; effective June 7, 1954. GATT effective Sept. 10, 1955.	Exchange of most-favoured-nation treatment. Remains in force for one year from ratification and thereafter unless terminated on three months notice.
LAOS.....	Franco-Canadian Trade Agreement of 1933 applied to Laos.	Since the creation of Laos as an independent State in 1955, Canada had continued to grant most-favoured-nation rates.
LEBANON.....	Special arrangement by Order in Council of Nov. 19, 1946.	Canada grants most-favoured-nation tariff rates as long as Lebanon accords reciprocal treatment.
LIBERIA.....	Special arrangement by Order in Council of June 3, 1955.	Canada grants most-favoured-nation tariff rates as long as Liberia accords reciprocal treatment.
LIECHTENSTEIN.....	(See Switzerland)	
LUXEMBOURG.....	(See Belgium)	
MEXICO.....	Trade Agreement signed Feb. 8, 1946; in force provisionally same date. Ratifications exchanged on May 6, 1947; definitively in force 30 days from that date.	Exchange of most-favoured-nation treatment. May be terminated on six months notice.
MOROCCO.....	Various agreements applied to French, Spanish and International Zones of Morocco.	Since the creation of Morocco as an independent State in 1956, Canada has continued to grant most-favoured-nation rates.
NETHERLANDS.....	Convention of Commerce of July 11, 1924. Suspended during war; reinstated by exchange of notes Feb. 1 and 5, 1946. Includes Netherlands Antilles and Surinam. GATT effective Jan. 1, 1948.	Exchange of most-favoured-nation treatment. May be terminated on one year's notice.
NICARAGUA.....	Trade Agreement signed Dec. 19, 1946; in force provisionally same date. GATT effective May 28, 1950.	Exchange of most-favoured-nation treatment. Provisional application may be terminated on three months notice.

**Tariff and Trade Arrangements with Non-Commonwealth Countries as at
Feb. 15, 1960—continued**

Country	Agreement	Principal Terms
NORWAY.....	Convention of Commerce and Navigation with United Kingdom of Mar. 18, 1826, applied to Canada. GATT effective July 10, 1948.	Exchange of most-favoured-nation treatment. Convention of May 16, 1913 provides means for separate termination by Dominions on one years notice.
PANAMA.....	Order in Council of July 20, 1935, accepted Article 12 of United Kingdom—Panama Treaty of Commerce of Sept. 25, 1928. Treaty terminated in 1942.	While contractual obligation has expired, Canada and Panama continue to exchange most-favoured-nation treatment.
PARAGUAY.....	Exchange of notes of May 21, 1940, in force June 21, 1940.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
PERU.....	GATT effective Oct. 8, 1951.	Exchange of most-favoured-nation treatment.
PHILIPPINES.....	No agreement at present.	Canada and Philippines, without contractual obligation, exchange most-favoured-nation treatment (excluding preferences accorded by the Philippines to the United States).
POLAND.....	Convention of Commerce signed July 3, 1935, in force Aug. 15, 1936.	Exchange of most-favoured-nation treatment including scheduled reductions. May be terminated on three months notice.
PORTUGAL, PORTUGUESE ADJACENT ISLANDS AND PORTUGUESE OVERSEAS PROVINCES.	Trade Agreement signed May 28, 1954, provisionally in effect July 1, 1954, definitively in force on ratification Apr. 29, 1955.	Exchange of most-favoured-nation treatment. Remains in effect for two years from ratification and thereafter unless terminated on three months notice.
SPAIN AND SPANISH POSSESSIONS.	Since Aug. 1, 1928, Canada has adhered to the United Kingdom-Spain Treaty of Commerce of Oct. 31, 1922. Trade Agreement signed May 26, 1954, provisionally in effect July 1, 1954, definitively in force on ratification June 30, 1955.	Exchange of most-favoured-nation treatment. May be terminated on six months notice. Supplements and amends United Kingdom-Spanish Treaty of Commerce. Remains in effect for three years from ratification, and thereafter unless terminated on three months notice.
SWEDEN.....	United Kingdom - Sweden Convention of Commerce and Navigation of Mar. 18, 1826, applies to Canada. GATT effective May 1, 1950.	Exchange of most-favoured-nation treatment. Declaration of Nov. 27, 1911 provides means for separate termination by Dominions on one years notice.
SWITZERLAND.....	United Kingdom - Switzerland Treaty of Friendship, Commerce and Reciprocal Establishment of Sept. 6, 1855, applies to Canada. By exchange of notes Liechtenstein included under terms of this Agreement, effective Aug. 2, 1947.	Exchange of most-favoured-nation treatment. Convention of Mar. 30, 1914, provides means for separate termination by the Dominions on one years notice.

**Tariff and Trade Arrangements with Non-Commonwealth Countries as at
Feb. 15, 1960—concluded**

Country	Agreement	Principal Terms
SYRIA (REGION OF UNITED ARAB REPUBLIC).	Special Arrangement by Order in Council of Nov. 19, 1946.	Canada grants most-favoured-nation tariff rates as long as Syria accords reciprocal treatment.
TUNISIA.....	Franco-Canadian Trade Agreement of 1933 applied to Tunisia (Tunisia is in customs union with France).	Since the creation of Tunisia as an independent State in 1956, Canada has continued to grant most-favoured-nation rates.
TURKEY.....	Exchange of notes signed Mar. 1, 1948; in effect Mar. 15, 1948. GATT effective Oct. 17, 1951.	Exchange of most-favoured-nation treatment. May be terminated on three months notice.
UNION OF SOVIET SOCIALIST REPUBLICS.	Trade Agreement signed Feb. 29, 1956. Ratifications exchanged May 26, 1956.	Exchange of most-favoured-nation treatment and undertaking by U.S.S.R. to purchase determined quantity of Canadian wheat. In force for three years from date of signature and may thereafter be extended by mutual agreement. (Expired Feb. 28, 1959, but most-favoured-nation treatment continues to be exchanged.)
UNITED ARAB REPUBLIC...	(See Egypt and Syria)	
UNITED STATES.....	Trade Agreement signed Nov. 17, 1938; suspended as long as both countries continue to be contracting parties to GATT. GATT effective Jan. 1, 1948.	Most-favoured-nation treatment exchanged under 1938 Agreement is continued under GATT.
URUGUAY.....	Trade Agreement signed Aug. 12, 1936; in force May 15, 1940. Additional Protocol signed Oct. 19, 1953. GATT effective Dec. 16, 1953.	Exchange of most-favoured-nation treatment. May be terminated on six months notice.
VIET NAM.....	Franco-Canadian Trade Agreement of 1933 applied to Viet Nam.	Since the creation of Viet Nam as an independent State, Canada has continued to accord most-favoured-nation rates.
VENEZUELA.....	<i>Modus vivendi</i> signed and brought into force Oct. 11, 1950.	Exchange of most-favoured-nation treatment. Made for one year subject to annual renewal.
YUGOSLAVIA.....	Trade Agreements Act of June 11, 1928, accepted Article 30 of United Kingdom-Serb-Croat-Slovene Treaty of Commerce and Navigation of May 12, 1927; in force Aug. 9, 1928.	Exchange of most-favoured-nation treatment. May be terminated on one years notice.

CHAPTER XXII.—PUBLIC FINANCE*

CONSPECTUS

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NOTE.—The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Section 1.—Combined Statistics of Public Finance for All Governments

Combined statistics of public finance for all governments in Canada—federal, provincial and municipal—are presented in this Section. More detailed information for each level of government is given in Sections 2, 3 and 4.

Combined Revenue and Expenditure.—Tables 1 and 2 give details of the federal, provincial and municipal net combined revenue by source and net combined current and capital expenditure by function, respectively, for 1956 and 1957. This net basis has been prepared by deducting from revenue, and the appropriate expenditure, certain specified amounts such as grants-in-aid and shared-cost contributions from other governments, institutional revenue, and interest, premium, discount and exchange revenue. Amounts provided for debt retirement are excluded to avoid duplication since all expenditure resulting from capital borrowings is included.

Inter-government transfers such as subsidy payments by the Federal Government to the provincial governments are unconditional grants and therefore cannot be offset against any specific expenditure. These are set out separately in Tables 1 and 2 in order to prevent duplication and to provide additive totals. Because of the differing accounting practices of governments and variations in fiscal year-ends, discrepancies appear between the amounts recorded as inter-government transfers in the two tables.

* Revised in the Public Finance and Transportation Division, Dominion Bureau of Statistics.

1.—Combined Revenue of All Governments, 1956 and 1957

NOTE.—Figures are for fiscal years ended nearest Dec. 31.

Source of Revenue	1956				1957			
	Federal	Pro- vincial	Muni- cipal	Total	Federal	Pro- vincial	Muni- cipal	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Taxes—								
Income—								
Corporations.....	1,335,637	62,161	—	1,397,798	1,295,471	214,438	—	1,509,909
Individuals.....	1,525,451	36,359	—	1,561,810	1,634,789	41,295	—	1,676,084
Interest, dividends and other income going abroad.....	76,447	—	—	76,447	64,334	—	—	64,334
General sales.....	896,351	177,897	50,804	1,125,052	878,962	183,159	52,424	1,114,545
Motor fuel and fuel oil sales.....	—	300,546	299	300,845	—	346,570	342	346,912
Other sales.....	—	44,593	2,719	47,312	—	48,589	3,095	51,684
Excise duties and special excise taxes.....	538,076	—	—	538,076	548,961	—	—	548,961
Customs import duties.....	549,075	—	—	549,075	498,069	—	—	498,069
Real and personal property.....	—	8,030	808,746	816,776	—	8,311	915,947	924,258
Business.....	—	—	51,689	51,689	—	—	57,959	57,959
Succession duties.....	79,709	64,555	—	144,264	71,608	52,645	—	124,253
Other.....	18,271	38,633	10,357	67,261	1,498	59,987	7,655	69,140
Totals, Taxes.....	5,019,017	732,774	924,614	6,676,405	4,993,692	954,994	1,037,422	6,986,108
Privileges, Licences and Permits—								
Liquor control and regulation....	12	33,343	—	33,355	11	40,514	—	40,525
Motor vehicle.....	—	127,503	—	127,503	—	139,729	—	139,729
Natural resources.....	4,667	287,905	—	292,572	4,280	278,010	—	282,290
Other.....	15,967	20,086	20,268	56,321	16,935	20,307	21,760	59,002
Totals, Privileges, Licences and Permits.....	20,646	468,837	20,268	509,751	21,226	478,560	21,760	521,546
Sales and services.....	45,847	27,083	—	72,930	57,291	28,435	—	85,726
Receipts from Government Enter- prises—								
Liquor boards and commissions..	—	153,801	—	153,801	—	164,544	—	164,544
Other.....	124,701	4,314	30,395	159,410	78,114	3,911	31,101	113,126
In lieu of municipal taxes from federal and provincial govern- ment enterprises.....	—	—	4,509	4,509	—	—	6,354	6,354
Totals, Receipts from Govern- ment Enterprises.....	124,701	158,115	34,904	317,720	78,114	168,455	37,455	284,024
Other revenue.....	201,562	7,370	77,785	286,717	216,884	8,670	83,397	308,951
Non-revenue and surplus receipts..	29,405	2,387	—	31,792	28,052	2,848	—	30,900
Totals, Net General Revenue excluding Inter-govern- ment Transfers.....	5,441,178	1,396,566	1,057,571	7,895,315	5,395,259	1,641,962	1,180,034	8,217,255
Inter-government Transfers—								
Tax rentals.....	—	366,328	—	366,328	—	354,354	—	354,354
Share of income tax on power utilities.....	—	6,613	—	6,613	—	7,261	—	7,261
Subsidies.....	—	22,810	41,127	63,937	—	21,996	55,357	77,353
Special payments.....	—	240	940	1,180	—	—	1,098	1,098
Grants in lieu of municipal taxes on federal and provincial pro- perty.....	—	—	10,358	10,358	—	—	18,488	18,488
Totals, Net General Revenue.	5,441,178	1,792,557	1,109,996	8,343,731	5,395,259	2,025,573	1,254,977	8,675,809

2.—Combined Expenditure of All Governments, 1956 and 1957

NOTE.—Figures are for fiscal years ended nearest Dec. 31.

Function	1956				1957			
	Federal	Pro- vincial	Muni- cipal ¹	Total	Federal	Pro- vincial	Muni- cipal ¹	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Defence services.....	1,685,823	—	—	1,685,823	1,587,309	—	—	1,587,309
Mutual aid.....	2	—	—	2	118,464	—	—	118,464
Veterans pensions and other benefits	261,397	—	—	261,397	287,674	—	—	287,674
Health, hospital care and other....	62,131	261,539	70,213	393,883	62,017	302,033	80,965	445,015
Social Welfare—								
Aid to aged persons.....	399,506 ²	47,180	..	..	499,034 ²	54,461	..	..
Aid to unemployed and unem- ployables.....	15,081	24,446	..	..	19,325	30,132	..	..
Family allowances.....	400,245	—	—	400,245	440,785	—	—	440,785
National employment services...	66,911	—	—	66,911	70,516	—	—	70,516
Other.....	14,496	71,708	..	..	17,341	83,488	..	..
Totals, Social Welfare.....	896,239	143,334	33,898	1,073,471	1,047,001	168,081	31,633	1,246,715
Education.....	38,453	362,248	439,788	840,489	97,231	452,276	493,896	1,043,403
Transportation and Communica- tions—								
Highways, roads and bridges....	52,414	556,831	225,700	834,945	80,559	582,519	296,307	959,385
Other.....	163,953	4,651	—	168,604	201,758	5,076	—	206,834
Natural resources and primary industries.....	155,827	132,577	—	288,404	183,017	146,890	—	329,907
Debt charges excluding debt re- tirement.....	471,274	55,308	105,814⁴	632,396	500,083	54,844	85,052	639,979
Payments to own government enter- prises.....	101,824	7,928	10,455	120,207	129,032	10,050	10,633	149,715
General government.....	316,198	69,829	100,817	486,844	298,981	83,357	108,365	490,703
Protection of persons and property.....	60,665	91,593	156,251	308,509	64,744	108,158	172,030	344,932
Sanitation and waste removal.....	—	—	117,187	117,187	—	—	116,955	116,955
International co-operation and as- sistance.....	168,571	—	—	168,571	52,939	—	—	52,939
Other.....	277,410	39,896	92,870	410,176	345,757	59,676	102,475	507,908
Non-expend and surplus payments.	50,288	6,508	—	56,796	342	8,994	—	9,336
Totals, Net General Ex- penditure excluding Inter- government Transfers.....	4,762,467	1,732,242	1,352,993	7,847,702	5,056,905	1,981,954	1,498,311	8,537,173
Inter-government Transfers—								
Tax rentals.....	366,696	—	—	366,696	354,243	—	—	354,243
Share of income tax on power utilities.....	6,614	—	—	6,614	7,362	—	—	7,362
Subsidies.....	22,811	40,024	—	62,835	21,996	53,284	—	75,280
Special payments.....	1,078	712	246	2,036	503	727	—	1,230
Grants in lieu of municipal taxes on federal and provincial pro- perty.....	9,709	840	—	10,549	17,595	1,022	—	18,617
Totals, Net General Expenditure.....	5,169,375	1,773,818	1,353,239	8,296,432	5,458,607	2,036,987	1,498,311	8,993,905

¹ Excludes capital expenditures out of capital fund for the Province of Quebec. ² Included in "Inter-national co-operation and assistance". ³ Includes pensions paid from Old Age Security Fund. ⁴ Includes debt retirement for municipalities in the Province of Quebec.

Consolidated Debt.—Table 3 gives details of combined debt of all governments for 1956 and 1957 with the aggregate debt of the federal, provincial and municipal governments; the inter-government debt is deducted to arrive at a consolidated government figure.

3.—Consolidated Debt of All Governments, 1956 and 1957

NOTE.—Figures are for fiscal years ended nearest Dec. 31.

Item	1956				1957							
	Federal	Pro- vincial	Muni- cipal	Total	Deduct Inter- government Debt	Consoli- dated Govern- ment Debt	Federal	Pro- vincial	Muni- cipal	Total	Deduct Inter- government Debt	Consoli- dated Govern- ment Debt
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Direct Debt—												
Funded debt ¹	12,743,415	2,939,566	2,645,596	18,328,577	220,984	18,107,593	12,720,107	3,028,951	2,994,039	18,743,097	214,812	18,528,285
Less sinking funds.....	210,805	550,223	98,403	859,431	—	859,431	211,741	619,029	106,109	936,879	—	936,879
Net funded debt.....	12,532,610	2,389,343	2,547,193	17,469,146	220,984	17,248,102	12,508,366	2,409,922	2,887,930	17,806,218	214,812	17,591,406
Treasury bills ²	1,625,000	29,098	—	1,654,098	—	1,654,098	1,525,000	39,700	—	1,564,700	—	1,564,700
Savings deposits.....	35,918	2,842	—	38,760	—	38,760	34,896	2,256	—	37,152	—	37,152
Temporary loans.....	—	20,659	167,360	188,019	—	188,019	—	24,470	207,109	231,579	—	231,579
Other direct liabilities.....	3,579,308	272,085	326,966	4,178,389	38,525	4,139,864	3,726,874	306,338	277,458	4,310,670	46,674	4,263,996
Totals, Direct Debt (less sinking funds).....	17,772,836	2,714,027	3,041,549	23,528,412	259,509	23,268,903	17,795,136	2,782,686	3,372,497	23,950,319	261,486	23,688,833
Indirect Debt—												
Guaranteed bonds.....	792,543	1,840,108	14,315	2,646,966	95,899	2,551,067	1,028,407	2,343,756	14,704	3,386,867	115,927	3,270,940
Less sinking funds.....	—	24,664	391	25,055	1,827	23,228	—	38,538	231	38,769	2,350	36,419
Net guaranteed bonds.....	792,543	1,815,444	13,924	2,621,911	94,072	2,527,839	1,028,407	2,305,218	14,473	3,348,098	113,577	3,234,521
Loans under the Municipal Improve- ment Assistance Act, 1938.....	—	2,609	—	2,609	2,609	—	—	2,352	—	2,352	2,352	—
Guaranteed bank loans and other indi- rect liabilities.....	1,253,427 ³	134,316	228	1,388,471	1,899	1,386,572	1,632,181 ³	119,234	177	1,751,592	891	1,750,701
Totals, Indirect Debt (less sinking funds).....	2,045,970	1,952,869	14,152	4,012,991	98,580	3,914,411	2,660,588	2,426,804	14,650	5,102,042	116,820	4,985,222
Grand Totals.....	19,818,806	4,666,896	3,055,701	27,541,403	358,089	27,183,314	20,455,724	5,209,490	3,387,147	29,052,361	378,306	28,674,055

¹ Includes treasury bills having a term of two or more years.² Includes treasury bills having a term of less than two years.³ Excludes contingent liability in respect of Federal Government guarantee of deposits maintained by chartered banks in the Bank of Canada and miscellaneous guarantees the amounts of which were not finally determined or were indeterminate at the close of the fiscal year.

Section 2.—Federal Public Finance

Subsection 1 of this Section contains tables dealing with statistics of the Federal Government prepared as far as possible, in accordance with the classifications, concepts and definitions used in the preparation of provincial and municipal finance statistics. These tables differ from the information presented in Subsection 2 in that the latter has been extracted directly from the *Public Accounts*. Detailed reports published by the Dominion Bureau of Statistics provide reconciliations of revenue, expenditure and debt as set out in Subsections 1 and 2. The *Public Accounts* presentation is retained for continuity, and also because there is interest in and use for information on this basis.

Historical Data.—A sketch of public finance from the French régime to the outbreak of World War I appears in the 1941 Year Book, pp. 742-743. Detailed sketches *re* tax changes from 1914 to 1938 will be found in issues of the Year Book beginning with the 1926 edition. An outline of the financing of Canada's war effort, including the more important changes in taxation during the war years from 1939 to 1945, is given in the 1945 Year Book, pp. 918-923. The postwar financial policy of the Government of Canada is outlined in the 1954 Year Book at pp. 1061-1064, and tax changes proposed in subsequent Budgets are outlined briefly in the 1955, 1956, 1957-58 and 1959 Year Books.

The 1959-60 Budget.—The Budget presented Apr. 9, 1959 to the second session of the 24th Parliament announced several changes in tax rates. On taxable income of individuals in excess of \$3,000 the existing rates were increased by 2 percentage points. The old age security taxes were each increased from 2 p.c. to 3 p.c. These taxes now consist of a tax of 3 p.c. (maximum \$90) on personal incomes, a tax of 3 p.c. on corporate incomes and a tax of 3 p.c. on sales. The increased rates apply to corporation income from Jan. 1, 1959, to personal income from July 1, 1959, and to sales from Apr. 10, 1959. The personal income tax schedule for 1959 is a composite of the new rates and those in effect prior to July 1, 1959; the new rates are applicable to the whole of 1960. On taxable income of corporations, effective from Jan. 1, 1959, the rates on amounts in excess of \$25,000 were increased from 45 p.c. plus 2 p.c. old age security tax, to 47 p.c. plus 3 p.c. old age security tax. Amendments to the Excise Tax Act and the Excise Act provided for increases in the tax on cigarettes and in the duties on spirits and cigars, respectively.

The 1960-61 Budget.—This Budget was presented to the third session of the 24th Parliament on Mar. 31, 1960. The Minister of Finance introduced no major tax changes. However, certain amendments of a technical nature were proposed which represented significant improvements in the fairness of the tax structure but did not affect over-all revenue collections.

Subsection 1.—DBS Statistics of Federal Public Finance

Revenue and Expenditure.—Table 4 shows details of net general revenue of the Federal Government for the years ended Mar. 31, 1957 and 1958.

4.—Details of Net General Revenue of the Federal Government, Years Ended Mar. 31, 1957 and 1958

Source	1957	1958	Source	1957	1958
	\$'000	\$'000		\$'000	\$'000
Taxes—			Privileges, Licences and Permits—		
Income—			Natural resources.....	4,667	4,280
Corporations ¹	1,335,637	1,295,471	Other.....	15,979	16,946
Individuals ¹	1,525,451	1,634,789	Sales and services other than		
Interest, dividends and			institutional.....	45,847	57,291
other income going abroad	76,447	64,334	Fines and penalties.....	866	1,603
General sales ¹	896,351	878,962	Exchange fund profits.....	17,420	22,880
Excise Duties and Special			Receipts from government en-		
Excise Taxes—			terprises.....	124,701	78,114
Alcoholic beverages.....	153,405	171,679	Bullion and coinage.....	4,134	5,060
Tobacco.....	252,887	273,586	Postal service.....	167,880	177,493
Automobiles.....	79,693	72,331	Other revenue.....	11,262	9,848
Other.....	52,091	81,365	Non-revenue and surplus re-		
Customs import duties.....	549,075	498,069	ceipts.....	29,405	28,052
Succession duties.....	79,709	71,608			
Other.....	18,271	1,498	Totals, Net General		
Totals, Taxes.....	5,019,017	4,993,692	Revenue.....	5,441,178	5,395,259

¹ Includes old age security taxes.

Table 5 gives details of expenditure by function for the years ended Mar. 31, 1957 and 1958 and Table 6 shows the amounts paid by the Federal Government to provincial governments and municipal corporations in the year ended Mar. 31, 1958.

5.—Details of Net General Expenditure of the Federal Government, Years Ended Mar. 31, 1957 and 1958

Function	1957	1958	Function	1957	1958
	\$'000	\$'000		\$'000	\$'000
Defence services.....	1,686,748	1,587,659	Education—		
Mutual aid.....	133,553	118,464	Indian and Eskimo schools..	16,333	24,259
Veterans' pensions and other benefits.....	261,397	287,674	Universities, colleges and other schools.....	20,458	71,114 ^a
General Government—			Other.....	1,662	1,858
Executive and administrative.....	297,353	269,812	Totals, Education.....	38,453	97,231
Legislative.....	8,152	21,142	Natural Resources and Primary Industries—		
Research, planning and statistics.....	10,693	8,027	Fish and game.....	14,919	17,159
Totals, General Government.....	316,198	298,981	Forests.....	7,843	12,077
Protection of Persons and Property—			Lands, settlement and agriculture.....	90,500	108,080
Law enforcement.....	6,364	6,576	Minerals and mines.....	27,025	29,893
Corrections.....	11,369	11,971	Water resources.....	1,373	1,516
Police protection.....	37,216	39,898	Other.....	14,167	14,292
Other.....	5,716	6,299	Totals, Natural Resources and Primary Industries.....	155,827	183,017
Totals, Protection of Persons and Property.....	60,665	64,744	Trade and industrial development.....	19,410	10,437 ^a
Transportation—			National capital area planning and development.....	4,824	5,987
Air.....	43,220	55,412	Loss on foreign exchange.....	1,582	-1,353
Road.....	52,414	80,559	Debt Charges (excluding debt retirement)—		
Rail.....	12,699	24,177	Interest.....	457,322	471,838
Water.....	88,192	96,114	Other.....	13,952	28,245
Other.....	2,039	2,048	Totals, Debt Charges (excluding debt retirement).....	471,274	500,083
Totals, Transportation....	198,564	258,310	Payments to government enterprises.....	101,824	129,032
Communications—telephone, telegraph and wireless.....	17,803	24,007	Payments to Provincial Governments—		
Health—			Tax rentals.....	366,696	354,243
General.....	2,495	2,655	Share of income tax on power utilities.....	6,614	7,362
Public.....	28,892	29,877	Subsidies.....	22,811	21,996
Medical, dental and allied services.....	4,824	5,233	Grants to Municipal Governments in lieu of taxes.....	9,691	17,574
Hospital care.....	25,920	24,252	Totals, Payments to Provincial and Municipal Governments ^a	405,812	401,175
Totals, Health.....	62,131	62,017	Other Expenditure—		
Social Welfare—			Citizenship and immigration.....	21,431	26,359
Aid to aged persons ¹	399,506	499,034	External affairs.....	13,247	14,531
Aid to blind persons.....	3,018	3,635	International co-operation and assistance.....	35,018	52,939
Aid to unemployed employables and unemployables..	15,081	19,325	Housing research and slum clearance.....	858	1,767
Family allowances.....	400,245	440,785	Civil defence.....	3,638	3,976
Labour.....	2,131	2,644	Postal service.....	162,049	177,880
National employment services.....	66,911	70,516	Royal Canadian Mint.....	1,193	1,286
Other.....	9,347	11,062	Other.....	32,272	38,113
Totals, Social Welfare.....	896,239	1,047,001	Totals, Other Expenditure.....	269,706	316,851
Recreational and Cultural Services—			Non-expense and Surplus Payments.....	50,288 ^b	342
Archives, art galleries, museums and libraries.....	1,545	1,913	Totals, Net General Expenditure.....	5,169,375	5,458,607
Parks.....	7,150	8,307			
Other.....	8,582	56,728 ^c			
Totals, Recreational and Cultural Services.....	17,277	66,948			

¹ Includes pensions paid from the Old Age Security Fund. ² Includes grant to the Canada Council of \$50,000 to establish an Endowment Fund. ³ Includes grant to the Canada Council of \$50,000 to establish a University Capital Grants Fund. ⁴ Unconditional payments; grants for specific purposes are classified by function. ⁵ Includes provision for reserve for possible losses on ultimate realization of active assets amounting to \$50,000.

6.—Payments by the Federal Government to Provincial Governments and Municipal Corporations, Year Ended Mar. 31, 1958

Payee and Purpose	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	All Pro- vinces	Yukon	N.W.T.	Canada
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Provincial Governments														
Tax-sharing arrangements.....	16,028	4,136	26,407	21,254	43,060	74,379	32,350	33,071	43,636	58,983	353,304	419	520	354,243
Share of income tax on power utilities.....	247	122	401	1,220	1,675	1,333	61	67	1,980	1,326	7,362	—	45	7,362
Subsidies.....	2,969	657	2,057	1,679	3,242	3,641	2,031	2,080	2,274	1,281	21,911	40	—	21,996
Grants-in-Aid and Shared-Cost Contributions—														
Trans-Canada Highway.....	861	1,233	3,532	3,558	—	12,410	2,729	3,346	5,290	16,418	49,386	287	—	49,386
Other transportation.....	—	—	—	419	99	508	18	5	108	400	1,557	—	—	1,524
General Health Grants—														
Hospital construction.....	93	41	279	515	1,092	3,267	384	221	629	1,418	8,039	—	10	8,049
General public health.....	235	97	373	255	1,316	1,792	267	563	554	767	9,269	—	27	6,317
Tuberculosis control.....	202	48	140	170	1,435	1,800	921	299	293	2,067	3,593	34	8	3,593
Mental health.....	189	74	301	274	1,039	1,956	346	462	463	682	2,459	—	—	6,523
Cancer control.....	154	13	170	128	1,044	1,100	195	202	246	283	3,459	—	4	3,459
Laboratory and radiological services.....	154	24	262	285	433	422	422	344	482	186	2,632	—	—	2,682
Other general health grants.....	156	38	237	183	990	1,015	272	279	283	291	3,744	—	15	3,759
Other health.....	12	—	4	3	23	25	4	4	6	7	88	—	—	88
Old age assistance.....	1,300	142	1,324	1,565	8,755	5,669	1,304	1,441	1,548	1,983	25,031	10	29	25,070
Disabled persons' allowances.....	206	113	457	405	6,049	2,524	273	317	397	749	11,090	—	2	11,092
Unemployment assistance.....	1,788	73	36	42	—	2,135	751	637	—	2,791	8,233	—	—	8,233
Other social welfare.....	162	38	330	320	1,265	845	195	192	203	255	3,795	2	11	3,808
Vocational training.....	158	62	446	277	3	536	347	338	1,370	674	4,211	—	2	4,213
Other education.....	227	—	6	1	2	167	15	81	10	45	554	—	—	554
Forests.....	37	17	50	1,071	—	643	190	170	144	724	3,046	—	—	3,046
Land—settlement and agriculture.....	137	39	93	51	278	91	186	55	67	70	1,037	—	—	1,037
Other natural resources.....	19	—	—	—	16	357	99	30	—	255	776	—	—	776
Other.....	14	—	45	37	—	715	60	69	202	390	1,532	—	—	1,532
Totals, Grants-in-Aid, etc.....	6,004	2,052	8,154	9,559	24,799	36,564	8,378	8,946	12,227	28,161	144,844	313	108	145,265
Totals, Paid to Provincial Governments...	25,248	6,897	37,019	32,712	72,776	115,917	42,820	44,164	60,117	89,751	527,421	772	673	528,866
Municipal Corporations														
Grants in lieu of taxes on federal property.....	33	76	1,892	781	2,424	8,166	1,040	625	1,045	1,453	17,535	25	35	17,595
Special grants.....	—	—	—	350	—	247	—	—	—	—	597	—	—	597
Grants-in-Aid and Shared-Cost Contributions—														
Transportation.....	—	—	1	17	69	470	8	28	29	248	870	—	—	870
Health.....	—	—	—	—	—	625	50	62	62	235	337	—	—	337
Schools operated by local authorities.....	—	—	175	—	186	168	28	—	387	444	1,388	—	—	1,388
Other.....	—	—	—	—	2	1,000	—	2	20	20	1,024	—	—	1,024
Totals, Paid to Municipal Corporations...	33	76	2,068	1,148	2,651	10,276	1,126	655	1,523	2,165	21,751	25	35	21,811
Grand Totals	25,281	6,973	39,087	33,860	75,427	126,193	43,946	44,819	61,640	91,916	549,172	797	708	550,677

Debt.—In Table 7, direct debt represents total liabilities less sinking funds and indirect debt consists of guarantees of direct debt of other authorities by the Federal Government. Table 8 gives the gross bonded debt of the Federal Government and the average interest rates and terms of issue as at Mar. 31, 1955-58, together with place of payment.

7.—Direct and Indirect Debt (less Sinking Funds) of the Federal Government as at Mar. 31, 1957 and 1958

Nature of Debt	1957	1958
	\$'000	\$'000
Direct Debt		
Funded Debt—		
Bonded debt.....	12,743,415	12,720,107
Less sinking funds.....	\$10,806	\$11,741
Net funded debt.....	12,532,610	12,508,366
Short-term treasury bills ¹	1,625,000	1,525,000
Savings deposits and certificates.....	35,918	34,896
Accounts and other payables.....	898,143	749,445
Annuity, insurance and pension accounts.....	2,427,159	2,712,813
Other liabilities.....	254,006	264,616
Totals, Direct Debt (less Sinking Funds).....	17,772,836	17,795,136
Indirect Debt		
Guaranteed bonds or debentures.....	792,543	1,028,407
Less sinking funds.....	—	—
Net guaranteed bonds or debentures.....	792,543	1,028,407
Guaranteed bank loans.....	101,250	165,732
Guaranteed insured loans under National Housing Act, 1954.....	1,083,000	1,394,635
Guarantees under Export Credits Insurance Act.....	66,112	68,371
Other guarantees.....	3,065	3,443
Totals, Indirect Debt (less Sinking Funds)².....	2,045,970	2,660,588
Totals, Direct and Indirect Debt (less Sinking Funds).....	19,818,806	20,455,724
	\$	\$
Direct debt (less sinking funds) per capita ³	1,071.36	1,043.82
Indirect debt (less sinking funds) per capita ³	123.33	156.06

¹ Having a term of three months. ² Excludes deposits of chartered banks in Bank of Canada. ³ Based on estimated population as at June 1, 1957 and June 1, 1958 (see p. 196).

8.—Gross Bonded Debt of the Federal Government, Average Interest Rate and Term of Issue, and Place of Payment as at Mar. 31, 1955-58

Item	1955	1956	1957	1958
Bonded debt..... \$'000	12,906,442	13,307,570	12,743,415	12,720,107
Average interest rate..... p.c.	2.93	2.92	2.96	3.06
Average term of issue..... yrs.	14.43	14.32	15.14	15.35
Place of Payment—				
Canada..... \$'000	12,506,631	12,955,759	12,391,604	12,368,296
New York..... "	348,000	300,000	300,000	300,000
London (England)..... "	51,811	51,811	51,811	51,811

Subsection 2.—Public Accounts Statistics of Federal Public Finance

Revenue and Expenditure.—Tables 9 and 10 show details of revenue and expenditure of the Federal Government for the fiscal years ended Mar. 31, 1957-59, as presented in the *Public Accounts*.

9.—Revenue of the Federal Government, Years Ended Mar. 31, 1957-59

SOURCE: *Public Accounts*

Revenue	1957	1958	1959
	\$	\$	\$
Tax Revenue—			
Customs import duties.....	549,074,860	498,068,539	486,508,581
Excise duties.....	271,443,661	300,132,512	316,744,269
Income tax.....	2,745,199,494	2,798,929,195	2,435,262,769
Personal ¹	1,400,451,444	1,499,788,390	1,858,499,514
Corporation ¹	1,268,300,915	1,234,806,795	1,020,550,164
On interest, dividends, rents, and royalties going abroad	76,447,135	64,354,080	61,213,291
Sales tax (net) ¹	717,080,563	703,169,768	694,490,787
Succession duties.....	79,709,197	71,607,758	72,535,140
Other taxes.....	285,423,996	250,919,610	241,836,980
Totals, Tax Revenue.....	4,647,931,771	4,622,827,382	4,247,378,526
Non-tax Revenue—			
Post Office.....	145,773,393	152,860,476	157,540,804
Return on investments ²	206,655,544	169,423,960	221,203,583
Bullion and coinage.....	4,089,662	5,011,280	4,454,630
Other.....	102,090,510	98,665,181	124,145,146
Totals, Non-tax Revenue.....	458,609,109	425,960,897	507,344,163
Totals, Revenue.....	5,106,540,880	5,048,788,279	4,754,722,689

¹ Excludes tax credited to the Old Age Security Fund.
the Bank of Canada.² Includes interest on investments and profits of

10.—Expenditure of the Federal Government, Years Ended Mar. 31, 1957-59

SOURCE: *Public Accounts*

Expenditure	1957	1958	1959
	\$	\$	\$
Agriculture.....	84,651,787	94,661,200	165,841,962
Acreage payments to western grain producers.....	—	—	41,500,000
Freight assistance on western feed grains.....	17,499,934	17,499,693	19,999,094
Other.....	67,161,853	77,161,607	104,542,868
Atomic Energy Control Board.....	21,882,226	21,580,708	26,136,051
Auditor General's Office.....	690,331	800,057	826,681
Board of Broadcast Governors.....	—	—	46,833
Canadian Broadcasting Corporation.....	39,266,161	42,974,021	62,017,601
Chief Electoral Officer.....	205,722	13,626,116	3,221,123
Citizenship and Immigration.....	44,517,150	52,421,729	53,490,102
Civil Service Commission.....	2,731,240	3,181,900	3,511,558
Defence Production.....	20,469,410	14,994,305	13,843,622
Capital assistance to defence industry.....	9,938,292	4,758,626	1,753,716
Other.....	10,531,118	10,235,779	12,109,906
External Affairs.....	60,227,824	60,209,169	75,486,493
Finance.....	1,152,758,655	1,187,361,634	1,228,205,281
Public Debt Charges—			
Interest on public debt.....	520,189,898	559,207,260	606,615,887
Annual amortization of bond discounts and commissions... ..	12,308,153	26,445,434	36,698,266
Servicing of public debt.....	555,898	519,945	606,933
Cost of loan flotation.....	1,088,036	1,220,637	4,105,410
Miscellaneous.....	—	28,044	—
Totals, Public Debt Charges.....	534,141,458	567,452,220	648,020,486

10.—Expenditure of the Federal Government, Years Ended Mar. 31, 1957-59—concluded

Expenditure	1957	1958	1959
	\$	\$	\$
Finance—concluded			
Provincial subsidies and tax rental payments.....	395,372,437	382,636,661	67,006,053
Government contribution to Civil Service Superannuation Account.....	72,359,995	73,083,186	37,646,322
Reserve for possible losses on realization of active assets.....	50,000,000	—	—
Grant to the Canada Council.....	—	100,000,000	—
Other.....	100,884,765	59,189,567	75,526,420
Fisheries.....	13,796,710	16,395,093	17,506,475
Governor General and Lieutenant-Governors.....	412,712	418,315	412,469
Insurance.....	543,307	1,178,311	1,224,160
Justice, including Penitentiaries.....	19,065,569	19,929,268	24,345,475
Labour.....	75,854,286	81,694,582	86,755,801
Unemployment Insurance Act, administration and Government contribution.....	66,357,949	70,300,092	72,395,424
Other.....	9,496,337	11,394,490	14,360,377
Legislation.....	7,176,643	6,845,985	7,626,868
Mines and Technical Surveys.....	35,926,412	36,134,969	43,788,537
National Defence.....	1,759,425,955	1,668,462,765	1,424,740,759
Mutual Aid to NATO countries.....	133,552,637	118,464,310	70,711,609
Other.....	1,626,873,313	1,649,998,465	1,364,089,250
National Film Board.....	4,960,143	4,019,466	4,258,905
National Health and Welfare.....	561,689,067	662,730,216	872,917,141
General health grants to provinces.....	36,280,147	34,606,069	46,859,331
Family allowances.....	397,517,840	437,886,560	474,787,068
Old age assistance, blind persons' and disabled persons' allowances ¹	30,417,187	39,737,463	49,772,315
Deficit Old Age Security Fund.....	56,012,857	103,907,898	133,979,162
Contributions under the Hospital Insurance and Diagnostic Services Act.....	—	—	54,708,474
Other ²	41,461,036	46,592,228	63,810,741
National Research Council.....	19,019,561	21,610,139	25,405,644
National Revenue.....	61,823,868	67,708,839	68,737,837
Northern Affairs and National Resources.....	36,970,235	49,071,273	65,176,832
Post Office.....	139,992,921	153,319,783	157,803,478
Privy Council including Prime Minister's Office.....	3,912,157	3,913,998	5,950,696
Public Archives.....	577,163	652,850	720,044
Public Printing and Stationery.....	3,200,656	3,275,332	3,451,428
Public Works.....	165,336,569	205,992,445	221,182,153
Trans-Canada Highway contributions.....	36,137,664	62,604,941	61,034,779
Other.....	129,198,905	143,537,504	160,147,374
Royal Canadian Mounted Police.....	43,449,799	47,355,538	51,734,621
Secretary of State.....	3,491,456	3,975,562	4,364,883
Trade and Commerce.....	55,389,457	56,938,946	65,636,032
Transport.....	158,162,525	206,734,088	288,837,764
Veterans Affairs.....	251,457,621	277,242,409	288,784,224
Grand Totals, Expenditure.....	4,849,035,298	5,087,411,011	5,364,039,533

¹ Pensions under the Old Age Security Act 1951 (effective January 1952) are paid out of the Old Age Security Fund account and are not recorded under departmental expenditure.

² Includes civil defence.

Statements of Assets and Liabilities.—Table 11 shows the statements of assets and liabilities of the Federal Government as they appear in the *Public Accounts* for the years ended Mar. 31, 1957-59.

11.—Statement of Assets and Liabilities of the Government of Canada as at Mar. 31, 1957-59

SOURCE: *Public Accounts*

Item	1957	1958	1959
	\$	\$	\$
Assets			
Current Assets—			
Cash.....	604,214,549	468,013,176	640,459,071
Departmental Working Capital Advances and Revolving Funds.....	123,939,243	130,109,380	151,798,348
Other Current Assets—			
Monies received after Mar. 31 but applicable to the current year.....	14,649,402	18,862,561	17,497,416
Securities investment account.....	204,253,602	79,846,332	98,030,754
	947,056,796	696,831,449	907,785,589
Advances to the Exchange Fund Account.....	2,021,000,000	1,975,000,000	1,995,000,000
Sinking fund and other investments held for retirement of unmatured debt.....	210,805,017	211,741,222	83,214,185
Loans to and Investments in Crown Corporations—			
Canadian National Railways.....	1,276,760,593	1,266,085,046	1,468,178,945
Central Mortgage and Housing Corporation.....	560,508,002	668,017,346	1,003,576,336
National Harbours Board.....	114,267,198	125,430,926	145,631,907
Miscellaneous.....	298,969,889	494,733,231	653,673,770
	2,250,505,682	2,554,266,549	3,271,060,958
Loans to national governments.....	1,478,559,528	1,487,984,714	1,448,960,511
Other Loans and Investments—			
Canada's Subscription to Capital of—			
International Monetary Fund.....	290,954,972	285,942,107	293,284,543
International Bank for Reconstruction and Development..	70,864,349	70,864,349	70,864,349
Working capital advances to international organizations.....	2,479,700	2,231,679	2,245,148
Provincial governments.....	69,645,873	70,827,737	96,338,853
Soldier Settlement and Veterans' Land Act loans (<i>less</i> reserve for conditional benefits).....	157,193,063	153,973,244	151,000,010
Miscellaneous.....	63,950,589	68,950,873	69,322,706
	655,088,546	662,789,989	683,055,609
Province debt accounts.....	100,124	—	—
Securities held in trust.....	—	22,646,036	20,742,062
Deferred Charges—			
Unamortized loan flotation costs.....	63,920,033	77,535,209	147,430,776
Unamortized portion of actuarial deficiency in the super-annuation account and permanent services pension account..	139,000,000	139,000,000	465,300,000
	202,920,033	216,535,209	612,730,776
Suspense Accounts—			
Temporary loan to Old Age Security Fund.....	1,506,233	—	—
Miscellaneous.....	7,926,134	2,465	2,465
	9,432,367	2,465	2,465
Capital assets.....	1	1	1
Inactive loans and investments.....	89,455,528	90,854,389	92,215,718
Totals, Assets.....	7,864,923,622	7,918,652,023	9,114,767,874
<i>Less</i> reserve for losses on realization of assets.....	<i>546,384,065</i>	<i>546,384,065</i>	<i>546,384,065</i>
Net Assets.....	7,318,539,557	7,372,267,958	8,568,383,809
Net debt.....	11,007,651,158	11,046,273,890	11,678,389,860
	18,326,190,715	18,418,541,848	20,246,773,669

11.—Statement of Assets and Liabilities of the Government of Canada, as at Mar. 31, 1957-59—concluded

Item	1957	1958	1959
	\$	\$	\$
Liabilities			
Current and Demand Liabilities—			
Outstanding treasury cheques.....	314,019,206	232,906,214	247,305,080
Accounts payable.....	232,859,952	201,369,937	256,401,698
Non-interest-bearing notes payable on demand.....	211,828,500	203,828,500	205,828,500
Matured debt outstanding.....	35,989,816	23,488,803	28,743,983
Interest due and outstanding.....	59,158,908	57,081,245	56,214,613
Interest accrued.....	119,958,733	129,053,772	124,892,689
Other current liabilities.....	29,093,529	27,144,833	30,041,731
	1,002,908,644	874,873,304	949,428,294
Deposit and trust accounts.....	167,575,354	187,018,117	237,890,641
Annuity, Insurance and Pension Accounts—			
Government annuities.....	989,285,939	1,047,641,226	1,105,825,076
Permanent services pension account.....	426,305,539	513,868,559	942,314,839
Superannuation account.....	918,943,987	1,045,760,439	1,136,021,863
Miscellaneous.....	92,623,457	105,542,600	117,699,254
	2,427,158,922	2,712,812,824	3,301,861,032
Undisbursed Balances of Appropriations to Special Accounts—			
National Defence equipment account (Sect. 3, Defence Appropriation Act, 1950).....	236,075,184	211,739,028	—
Miscellaneous.....	76,481,065	73,628,240	83,386,633
	312,556,249	285,367,268	83,386,633
Suspense accounts and deferred credits.....	47,576,093	113,363,182	100,093,566
Unmatured Debt—			
Bonds—			
Payable in Canada.....	12,391,604,000	12,368,395,700	13,777,302,050
Payable in London.....	51,811,453	51,811,453	51,811,453
Payable in New York.....	300,000,000	300,000,000	150,000,000
Treasury Bills and Notes—			
Payable in Canada.....	1,625,000,000	1,525,000,000	1,595,000,000
	14,368,415,453	14,245,107,153	15,574,113,503
Totals, Liabilities.....	18,326,190,715	18,418,541,848	20,246,773,669

Guaranteed Debt.—In addition to the direct debt of the Federal Government already dealt with, there are large indirect obligations such as those arising out of the guarantee of securities issued by the Canadian National Railways. In addition, guarantees of certain bank loans have been made under the various Relief Acts, the National Housing Act, the Farm Improvement Loans Act, and the Veterans Business and Professional Loans Act. When the Bank of Canada commenced business on Mar. 11, 1935, the guarantee of the deposit required to be maintained in the Bank of Canada by every chartered bank

came into force. This guarantee must be implemented "in the event of the property and assets of the Bank being insufficient to pay its liabilities and/or if the Bank suspends payment of any of its liabilities".

12.—Guaranteed Debt of the Government of Canada—Amounts Held by the Public as at Mar. 31, 1959

Item	Amount of Guarantee Authorized	Amount Outstanding in the Hands of the Public as at Mar. 31, 1959 ¹
	\$	\$
Railway Securities Guaranteed as to Principal and Interest—		
Canadian Northern Alberta Ry. Co. 3½ per cent deb. stock due 1960, £847,260/5/6.....	3,150,000	316,856
Canadian Northern Ontario Ry. Co. 3½ per cent deb. stock due 1961, £7,350,000/0/0.....	35,770,000	2,069,805
Grand Trunk Pacific Ry. Co. 3 per cent bonds due 1962, £14,000,000/0/0.....	68,040,000	26,465,130
Canadian Northern Alberta Ry. Co. 3½ per cent deb. stock due 1962, £733,561/12/10.....	3,570,000	—
Grand Trunk Pacific Ry. Co. 4 per cent bonds due 1962, £3,280,000/0/0.....	15,940,800	7,999,074
Canadian National Ry. Co. 2½ per cent bonds due 1963.....	250,000,000	250,000,000
Canadian National Ry. Co. 3 per cent bonds due 1966.....	35,000,000	35,000,000
Canadian National Ry. Co. 2½ per cent bonds due 1967.....	50,000,000	50,000,000
Canadian National Ry. Co. 2½ per cent bonds due 1969.....	70,000,000	70,000,000
Canadian National Ry. Co. 2½ per cent bonds due 1971.....	40,000,000	40,000,000
Canadian National Ry. Co. 3½ per cent bonds due 1974.....	200,000,000	200,000,000
Canadian National Ry. Co. 2½ per cent bonds due 1975.....	6,000,000	6,000,000
Canadian National Ry. Co. 4 per cent bonds due 1981.....	300,000,000	300,000,000
	1,077,470,800	987,850,865
Railway Securities Guaranteed as to Interest Only—		
Grand Trunk Ry. acquisition guarantees—		
Grand Trunk 5 per cent perp. deb. stock £4,270,375/0/0.....	20,782,492	51,190
Grand Trunk 4 per cent perp. deb. stock £24,624,455/0/0.....	119,839,014	5,054
	140,621,506	56,244
Other Guarantees—		
Deposits maintained by chartered banks in Bank of Canada.....	Unstated	629,024,600
Loans made by approved lending institutions under National Housing Acts prior to 1954 Act.....	Unstated	Indeterminate
Loans made by lenders under Part IV of the National Housing Act, 1954, for home extensions and improvements.....	10,000,000	4,980,094 ²
Insured loans made by approved lenders under the National Housing Act, 1954.....	4,000,000,000	2,054,319,234 ³
Guarantees to owners of return from moderate-rental housing projects.....	Unstated	Indeterminate
Guarantees under Export Credits Insurance Act Part I.....	100,000,000	52,117,971
Guarantees under Export Credits Insurance Act Part II.....	12,750,000	2,550,000
Loans made by chartered banks under the Farm Improvement Loans Act....	58,952,089	33,119,791
Loans made by chartered banks under the Veterans Business and Professional Loans Act.....	Indeterminate	461,078
Loans made by chartered banks under the Prairie Grain Producers' Interim Financing Act, 1956.....	Indeterminate	357,692
Loans made by chartered banks under the Fisheries Improvement Loans Act.....	Indeterminate	99,062
Loans made by chartered banks to Canadian Wheat Board.....	150,000,000	91,589,369
Loans made by chartered banks under the Prairie Grain Advance Payments Act.....	Unstated	14,018,775

¹ These contingent liabilities are expressed in Canadian dollars; where applicable, stocks and bonds payable solely in sterling or United States dollars are converted on the basis of £1=\$2.80 and \$1 U.S.=.35 Canadian, respectively. In addition the government has an indeterminate contingent liability in respect of rental guarantee contracts which in 1958 amounted to approximately \$15,000,000. Against this amount was a reserve of \$2,460,227.

² As at Dec. 31, 1958. ³ As reported (in accordance with Sect. 45, National Housing Loan Regulations) by approved lenders for their respective fiscal years ended between Oct. 31 and Dec. 31, 1958.

A brief commentary dealing with the national debt of the Government of Canada from 1914 appears at p. 1091 of the 1954 Year Book. The following table summarizes the debt position during the period 1950-59 as to interest and amount outstanding. Details of unmatured debt and treasury bills outstanding and information on new security issues of

the Federal Government may be found in the *Public Accounts*. They are summarized by standard classification in DBS publication *Financial Statistics of the Government of Canada* (Catalogue No. 68-210).

13.—Summary of the Public Debt and Interest Payments Thereon, Years Ended Mar. 31, 1950-59

NOTE.—Statistics for 1867-1913 are given in the 1942 Year Book, p. 775; those for 1914-35 in the 1947 edition, p. 972; those for 1936-48 in the 1951 edition, p. 1009; and those for 1949 in the 1959 edition, p. 1063.

Year	Gross Debt	Net Active Assets	Net Debt	Net Debt per Capita ¹	Increase or Decrease of Net Debt during Year	Interest Paid on Debt	Interest Paid per Capita ²
	\$	\$	\$	\$	\$	\$	\$
1950.....	16,750,756,246	5,106,147,047	11,644,609,199	849.23	-131,524,953	439,816,335	32.71
1951.....	16,923,307,028	5,489,992,080	11,433,314,948	816.14	-211,294,251	425,217,500	31.01
1952.....	17,237,668,676	6,072,387,129	11,185,281,546	773.59	-248,033,402	432,423,082 ³	30.87
1953.....	17,918,490,812	6,756,756,543	11,161,734,269	751.88	-23,547,277	451,389,521	31.21
1954.....	17,923,189,502	6,807,252,438	11,115,937,064	727.15	-45,797,205	476,061,625	32.07
1955.....	17,951,491,464	6,688,411,310	11,263,080,154	717.49	147,143,090	477,914,894	31.26
1956.....	19,124,232,779	7,848,868,815	11,280,368,964	701.47	17,288,810	492,624,067	31.38
1957.....	18,335,797,515 ³	7,328,146,357 ³	11,007,651,158	668.55	-272,717,806	520,189,398	32.35
1958.....	18,418,541,848	7,372,267,958	11,046,273,890	647.94	38,622,732	539,207,260	32.50
1959.....	20,246,773,669	8,568,383,809	11,678,389,860	669.56	632,115,970	606,615,887	35.58

¹ Based on the official estimates of population for June 1 of the year indicated (see p. 196).

² Based on

the official estimates of population for June 1 of the year immediately preceding the one indicated (see p. 196).

³ Excludes \$87,510,068 adjustment required to place interest on public debt on accrued basis.

Subsection 3.—Analysis of Revenue from Taxation

The following analysis of taxation revenue is confined to excise duties, excise taxes, income tax and succession duties; customs receipts constitute a single item in the *Public Accounts* and are not analysed here.

Excise Duties

Excise duties proper are presented below with a summary of the excise tariff and statistics arising as a by-product of administration, such as the quantities of grain and other products used in distillation and the quantities of goods taken out of bond and subject to excise tax.

Canadian Excise Tariff.—The following is a statement of the Canadian excise tariff as at Dec. 31, 1959:—

Spirits.....	per proof gal.	\$13.00	Spirits used directly in the manufacture of toilet preparations or cosmetics on which excise tax is applicable under Schedule I of the Excise Tax Act.....	per proof gal.	Free
Spirits used by licensed bonded manufacturers.....	per proof gal.	1.50	Canadian brandy.....	per proof gal.	\$11.00
Spirits used in bond for manufacture of perfume.....	per proof gal.	Free	Malt, all, when brought into a brewery.....	per lb.	Free
Spirits used in bond for manufacture of approved chemical compositions.....	per proof gal.	0.15	Beer, all.....	per Imp. gal.	0.38
Spirits sold to druggists licensed under the Excise Act to be used exclusively in preparation of prescriptions for medicines and pharmaceutical preparations....	per proof gal.	1.50	Tobacco, manufactured, all descriptions except cigarettes.....	per lb.	0.35
Spirits distilled from wine produced from native fruits, and used in any bonded manufactory for the treatment of domestic wine.....	per proof gal.	Free	Cigarettes, weighing not more than two and one-half pounds... per M		4.00
Spirits imported and taken into a bonded manufactory (in addition to duties otherwise imposed).....	per proof gal.	0.30	Cigarettes, weighing more than two and one-half pounds..... per M		5.00
			Cigars, all.....	per M	2.00
			Canadian raw leaf tobacco, when sold for consumption.....	per lb.	0.10

A drawback of 99 p.c. of the duty may be granted when domestic spirits, testing not less than 50 p.c. over proof, are delivered in limited quantities for medicinal or research purposes to universities, scientific or research laboratories, public hospitals, or health institutions in receipt of federal and provincial government aid.

14.—Gross Excise Duties Collected, Years Ended Mar. 31, 1955-59

Item	1955	1956	1957	1958	1959
	\$	\$	\$	\$	\$
Spirits.....	72,185,407	77,518,388	86,190,032	89,928,576	96,550,734
Beer or malt liquor.....	72,676,281	80,742,806	83,077,741	88,225,546	83,058,147
Malt.....	1,151,032 ¹	—	—	—	—
Tobacco and cigarettes.....	100,511,808	110,092,584	120,818,541	131,378,168	140,881,924
Cigars.....	241,177	262,477	267,235	305,894	319,369
Licences.....	36,826	35,143	35,556	34,069	34,471
Totals².....	246,802,531	268,651,398	290,379,105	309,872,253	320,844,645

¹ Tax on malt replaced by gallage tax on beer.

² These totals do not agree with net excise duties as shown in Table 9 because refunds, drawbacks and, for spirits, a transfer tax are included here.

Statistics of Licences and Distillation.—As a result of the collection of excise duties, statistics are compiled of excise licences issued and of distillation.

15.—Statistics of Licences and Distillation, Years Ended Mar. 31, 1955-59

Item	1955	1956	1957	1958	1959
Licences issued.....No.	30	30	28	28	27
Licence fees.....\$	8,000	6,500	7,750	7,250	7,000
Grain, etc., Used for Distillation—					
Malt.....lb.	37,438,384	40,523,848	41,788,225	39,096,917	38,307,971
Indian corn.....“	233,470,614	256,237,853	281,299,649	247,011,281	240,221,429
Rye.....“	40,697,817	50,297,683	55,480,416	61,228,045	61,923,728
Wheat and other grain.....“	26,448,064	3,013,785	803,490	770,540	4,105,310
Totals, Grain Used.....lb.	338,054,879	350,073,169	379,371,780	348,106,783	344,558,438
Molasses used.....lb.	31,922,119	35,793,467	35,471,876	33,352,564	69,272,572
Wine and other materials.....“	5,721,010	5,303,650	4,114,008	4,875,894	8,485,879
Sulphide liquor.....gal.	370,916,068	409,830,302	368,070,334	374,711,047	339,002,204
Proof spirits manufactured....proof gal.	27,330,433	28,535,869	30,028,834	28,135,387	29,763,383

The quantity of spirits manufactured has fluctuated greatly since 1920, varying from a low of 2,356,329 proof gal. in that year to a high of 35,555,059 proof gal. recorded in 1945. The total for 1959 was 29,763,383 proof gal.

Alcohol and Tobacco Taken Out of Bond.—The amounts of beverage spirits, malt beer, malt, cigars, cigarettes and other tobacco taken out of bond for consumption are given in the Domestic Trade Chapter, Table 38, p. 950.

Excise Taxes Collected

The statistics given in Table 16 represent gross excise tax collection by the Excise Division of the Department of National Revenue.

16.—Excise Taxes Collected, by Commodity, Years Ended Mar. 31, 1955-59

(Accrued Revenue)

Commodity	1955	1956	1957	1958	1959
	\$	\$	\$	\$	\$
Domestic—					
Automobiles, tires and tubes.....	71,356,616	63,298,865	69,314,263	62,108,080	47,303,897
Beverages.....	8,078,328	8,607,286	8,848,161	608,851	...
Candy and chewing gum.....	9,121,728	8,390,591	9,021,685	712,700	...
Carbonic acid gas.....	158,453	147,937	139,378	6,463	...
Cigars, cigarettes and tobacco.....	112,677,653	125,107,756	130,581,094	140,682,617	146,509,545
Electrical and gas apparatus.....	406,613	...	...	...	...
Furs.....	54,591	...	...	...	...
Licences.....	84,180	82,062	84,520	81,984	19,324
Lighters.....	124,694	80,674	69,040	60,329	62,833
Matches.....	656,642	597,394	604,431	632,146	628,914
Other taxes on manufactures.....	4,907,621	4,522,546	5,387,461	4,668,672	4,526,775
Phonographs, radios and tubes.....	3,852,986	4,013,432	5,320,010	5,581,524	5,495,501
Playing cards.....	649,915	648,975	635,202	701,555	783,670
Sales, domestic.....	616,558,675	676,008,159	764,048,020	764,789,901	753,175,577
Television sets and tubes.....	16,668,388	17,627,314	12,443,101	9,927,745	10,083,057
Toilet preparations.....	5,016,582	5,335,626	5,828,044	6,032,146	6,576,040
Wines.....	2,354,267	2,485,760	2,618,324	2,744,237	3,140,180
Penalties and interest.....	342,250	315,014	399,648	476,786	427,332
Totals, Domestic.....	853,070,152	917,269,391	1,015,343,582	999,815,736	978,682,645
Imported.....	137,438,524	166,931,249	176,714,583	159,173,870	162,110,151
Grand Totals.....	990,508,676	1,084,200,640	1,192,058,165	1,158,989,606	1,140,792,796

Income Tax

Income Tax Collections by the Department of National Revenue on a Fiscal-Year Basis.—Statistics of income tax collections are gathered at the time the payments are made and are therefore up to date. Over 85 p.c. of individual taxpayers are wage or salary earners who have almost the whole of their tax liability deducted at the source by their employers. All other taxpayers are required to pay most of their estimated tax during the taxation year. Thus, the greater part of the tax is collected during the same year in which the related income is earned and only a limited residue remains to be collected when the returns are filed. The collections for a given fiscal year include tax deductions and instalments for twelve months, embracing portions of two taxation years, and a mixture of year-end payments for the first of these years and for the preceding year; they cannot therefore be closely related to the statistics for a given taxation year. As little information about a taxpayer is received when the payment is made and, as a single cheque from one employer may frequently cover the tax payments of hundreds of employees, the payments cannot be statistically related to taxpayers by occupation or income. Descriptive classifications of taxpayers are available only from tax returns but collection statistics, if interpreted with the current tax structure and the above factors in mind, indicate the trend of income in advance of the final compilation of statistics.

The statistics given in Table 17 pertain to tax collections by the Taxation Division of the Department of National Revenue. The collections are for fiscal years ended Mar. 31.

17.—Taxes Collected by the Taxation Division of the Department of National Revenue, Years Ended Mar. 31, 1951-60

NOTE.—Figures for 1917-34 are given in the 1947 Year Book, pp. 999-1000; for 1935-48 in the 1951 Year Book, p. 994; and for 1949-50 in the 1959 edition, p. 1066.

Year Ended Mar. 31—	Income Tax ¹			Excess Profits Tax	Succession Duties	Total Collections
	Individual ²	Corporation	Total			
	\$	\$	\$	\$	\$	\$
1951.....	713,938,999	799,196,511	1,513,135,510	10,140,910	33,599,089	1,556,875,509
1952.....	1,030,793,334	1,132,680,074	2,163,473,408	2,364,909	38,207,985	2,204,046,302
1953.....	1,278,949,939	1,276,940,150	2,555,890,089	—	38,070,529	2,593,960,618
1954.....	1,332,116,907	1,246,786,598	2,578,903,505	—	39,137,594	2,618,041,099
1955.....	1,345,611,443	1,066,585,823	2,412,197,266	—	44,768,029	2,456,965,295
1956.....	1,354,275,414	1,081,055,818	2,435,331,232	—	66,607,026	2,501,938,258
1957.....	1,601,897,580	1,335,636,914	2,937,534,494	—	79,709,197	3,017,243,691
1958.....	1,699,123,470	1,295,470,725	2,994,594,195	—	71,607,758	3,066,201,953
1959.....	1,561,062,606	1,075,878,164	2,636,940,770	—	72,535,140	2,709,475,910
1960.....	1,825,547,063	1,234,215,702	3,059,762,765	—	88,430,705	3,148,193,470

¹ Includes old age security tax from 1952-60.

² Includes "non-resident" taxes.

Individual Income Tax Statistics.—Individual income tax statistics are presented in Tables 18 to 20 on a calendar-year basis and are compiled from a sample of all returns received. Taxpayers and amounts of income and tax are shown for selected cities and by occupation and income classes.

18.—Number of Taxpayers and Amounts of Income and Tax, by Selected Cities, 1957 and 1958

City and Province	1957			1958		
	Taxpayers	Total Income Assessed	Tax Payable ¹	Taxpayers	Total Income Assessed	Tax Payable ¹
	No.	\$'000	\$'000	No.	\$'000	\$'000
Brantford, Ont.....	17,378	63,911	5,391	18,423	71,362	6,055
Calgary, Alta.....	75,082	309,179	32,818	79,083	338,960	33,848
Edmonton, Alta.....	95,524	370,261	36,166	96,215	387,868	35,531
Fort William and Port Arthur, Ont..	30,265	114,910	10,367	29,190	117,678	9,836
Halifax, N.S.....	43,464	159,492	13,542	41,301	154,383	12,429
Hamilton, Ont.....	113,397	465,471	46,344	111,393	469,039	42,622
Hull, Que.....	15,277	50,447	3,204	14,143	50,076	2,928
Kitchener and Waterloo, Ont.....	30,516	115,604	10,941	31,599	125,019	11,149
London, Ont.....	45,512	164,869	14,628	48,129	186,475	16,571
Montreal, Que.....	551,979	2,197,419	199,117	540,667	2,249,965	189,390
New Westminster, B.C.....	20,905	81,989	7,609	20,977	84,574	7,028
Niagara Falls, Ont.....	16,702	67,812	6,028	15,107	62,446	5,068
Oshawa, Ont.....	20,151	83,713	8,627	20,638	88,151	8,470
Ottawa, Ont.....	92,037	368,679	36,086	96,773	410,031	38,903
Quebec, Que.....	56,042	206,241	16,376	58,543	226,586	15,810
Regina, Sask.....	32,639	126,051	12,834	37,231	148,163	13,352
St. Catharines, Ont.....	22,160	93,874	9,377	21,528	92,108	8,333
St. John's, Nfld.....	17,797	65,197	5,803	17,407	66,667	5,544
Saint John, N.B.....	19,815	68,998	5,339	19,796	70,335	5,022
Saskatoon, Sask.....	25,840	92,736	8,079	26,123	103,539	8,951
Sherbrooke, Que.....	13,471	46,231	3,105	11,665	41,893	2,701
Sudbury and Copper Cliff, Ont.....	35,270	150,914	14,558	30,259	121,811	9,840
Sydney and Glace Bay, N.S.....	13,095	49,427	3,590	13,170	51,038	3,548
Toronto, Ont.....	607,534	2,445,156	268,737	620,301	2,640,721	277,460
Vancouver (incl. West Van.), B.C.....	219,669	901,891	94,127	211,622	914,530	90,371
Victoria, B.C.....	40,634	159,232	14,437	42,370	172,051	14,326
Windsor, Ont.....	53,481	210,307	18,260	45,949	188,788	16,002
Winnipeg, Man.....	139,670	515,188	47,328	144,144	564,027	50,182
Other localities.....	1,611,159	5,883,380	463,297	1,584,506	6,027,080	442,066
Totals.....	4,076,465	15,628,579	1,415,115	4,048,252	16,225,364	1,383,326

¹ Includes old age security tax.

19.—Number of Taxpayers and Amounts of Income and Tax, by Occupational Class, 1957 and 1958

Occupational Class	1957			1958		
	Taxpayers	Total Income Assessed	Tax Payable ¹	Taxpayers	Total Income Assessed	Tax Payable ¹
	No.	\$'000	\$'000	No.	\$'000	\$'000
Farmers.....	53,504	200,064	14,237	61,858	247,776	17,967
Fishermen.....	3,662	13,748	1,127	5,315	26,478	2,727
Professionals—						
Accountants.....	3,184	34,639	6,719	3,826	40,657	7,280
Medical doctors.....	11,755	164,306	34,154	12,201	186,242	38,310
Dentists.....	3,756	38,438	6,349	4,479	47,754	7,859
Lawyers and notaries.....	6,110	80,922	18,055	7,133	93,894	20,347
Engineers and architects.....	2,029	29,584	7,337	2,109	30,075	6,816
Nurses.....	3,251	7,591	497	2,611	6,115	361
Other professionals.....	7,973	45,536	5,722	8,157	50,961	6,436
Employees.....	3,632,065	13,137,698	1,086,333	3,571,015	13,465,575	1,033,414
Salesmen.....	49,368	264,339	28,981	50,968	273,483	26,931
Business proprietors.....	188,724	988,555	119,560	188,636	1,030,342	117,047
Investors.....	85,664	533,984	79,480	96,318	604,974	89,468
Pensioners.....	17,270	54,189	3,183	24,213	74,995	3,944
All others.....	2,150	34,986	3,381	9,413	46,043	4,419
Totals.....	4,076,465	15,628,579	1,415,115	4,048,252	16,225,364	1,383,326

¹Includes old age security tax.

20.—Individual Income Tax Statistics, by Income Class, 1957 and 1958

Income	Taxpayers		Total Income Assessed		Tax Payable ¹		Average Tax ¹	
	1957	1958	1957	1958	1957	1958	1957	1958
	No.	No.	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Under \$1,000.....	34,082	20,606	20,929	11,297	1,187	746	35	36
\$1,000 under \$1,100...	5,836	2,720	6,102	2,838	321	132	55	49
\$1,100 " \$1,200...	65,065	59,317	74,758	68,172	776	561	12	9
\$1,200 " \$1,300...	71,927	67,242	89,482	83,749	1,680	1,298	23	19
\$1,300 " \$1,400...	73,397	70,347	98,648	94,579	2,642	2,164	36	31
\$1,400 " \$1,500...	70,789	67,960	102,332	98,112	3,568	2,803	50	41
\$1,500 " \$1,600...	73,647	70,663	113,867	109,171	4,570	3,753	62	53
\$1,600 " \$1,700...	76,692	71,244	126,176	117,245	5,475	4,269	71	60
\$1,700 " \$1,800...	78,258	71,641	136,560	125,008	6,483	5,049	83	70
\$1,800 " \$1,900...	79,221	74,744	146,062	137,845	7,728	6,161	98	82
\$1,900 " \$2,000...	79,205	73,773	154,077	143,438	8,650	6,872	109	93
Totals, \$1,000 and under \$2,000.....	674,037	629,651	1,048,064	980,157	41,893	33,062	62	53
\$2,000 under \$2,100...	79,488	74,038	162,688	151,404	9,752	7,789	123	105
\$2,100 " \$2,200...	87,185	84,238	187,007	180,687	10,677	8,980	122	107
\$2,200 " \$2,300...	89,834	82,105	201,785	184,341	11,824	9,338	132	114
\$2,300 " \$2,400...	92,338	87,627	216,519	205,533	12,781	10,618	138	121
\$2,400 " \$2,500...	96,892	89,875	236,882	219,649	13,653	11,652	141	130
\$2,500 " \$2,600...	96,399	86,587	245,390	220,331	14,162	11,927	147	138
\$2,600 " \$2,700...	105,340	96,176	278,504	254,300	15,844	13,003	150	135
\$2,700 " \$2,800...	105,505	94,464	289,577	259,294	16,309	13,876	155	147
\$2,800 " \$2,900...	114,117	96,938	324,830	275,861	18,348	14,744	161	152
\$2,900 " \$3,000...	108,736	101,820	320,332	299,814	18,711	16,008	172	157
Totals, \$2,000 and under \$3,000.....	975,834	893,868	2,463,514	2,251,214	142,061	117,935	146	132

¹Includes old age security tax.

20.—Individual Income Tax Statistics, by Income Class, 1957 and 1958—concluded

Income	Taxpayers		Total Income Assessed		Tax Payable ¹		Average Tax ¹	
	1957	1958	1957	1958	1957	1958	1957	1958
	No.	No.	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
\$3,000 under \$3,100...	111,954	102,358	340,802	311,466	19,752	16,831	176	164
\$3,100 " \$3,200...	114,429	109,156	359,785	343,288	21,320	18,547	186	170
\$3,200 " \$3,300...	108,215	101,674	351,114	329,858	21,071	17,868	195	176
\$3,300 " \$3,400...	111,473	103,537	372,869	346,391	22,645	19,099	203	184
\$3,400 " \$3,500...	107,944	102,751	371,808	354,031	23,181	19,606	215	191
\$3,500 " \$4,000...	498,046	496,805	1,862,501	1,857,461	123,351	107,340	248	216
\$4,000 " \$4,500...	378,555	407,922	1,600,900	1,725,578	118,803	108,884	314	267
\$4,500 " \$5,000...	261,450	287,953	1,235,845	1,361,708	100,693	94,498	385	328
Totals, \$3,000 and under \$5,000....	1,692,066	1,712,156	6,495,714	6,629,781	450,816	402,673	266	235
\$5,000 under \$6,000...	303,483	340,429	1,648,439	1,848,201	149,527	147,393	493	433
\$6,000 " \$7,000...	147,899	165,242	950,424	1,062,430	95,392	97,585	645	591
\$7,000 " \$8,000...	75,870	88,901	564,987	661,975	61,999	67,111	817	755
\$8,000 " \$9,000...	45,391	49,370	383,541	416,871	45,170	45,684	995	925
\$9,000 " \$10,000...	27,633	32,298	261,033	305,347	33,039	36,219	1,196	1,121
Totals, \$5,000 and under \$10,000....	600,276	676,240	3,808,424	4,294,824	385,127	393,992	642	583
\$10,000 under \$15,000.	58,996	68,351	704,886	815,693	104,646	115,119	1,774	1,684
\$15,000 " \$20,000.	19,715	22,931	337,234	391,916	65,771	72,993	3,336	3,183
\$20,000 " \$25,000.	8,132	9,330	180,509	207,335	41,790	46,361	5,139	4,969
Totals, \$10,000 and under \$25,000....	86,843	100,612	1,222,629	1,414,944	212,207	234,473	2,444	2,330
\$25,000 under \$50,000.	10,672	12,181	351,839	402,770	99,054	111,214	9,282	9,130
\$50,000 and over.....	2,655	2,938	217,466	240,377	82,770	89,231	31,175	30,371
Totals, \$25,000 and over.....	13,327	15,119	569,305	643,147	181,824	200,445	13,643	13,258
Grand Totals.....	4,076,465	4,048,252	15,628,579	16,225,364	1,415,115	1,393,326	347	342

¹ Includes old age security tax.

Corporation Income Tax Statistics.—Corporation statistics presented in Tables 21 and 22 are on a taxation-year basis prior to assessment. The data were extracted and compiled from the returns shortly after they were filed and are as declared by the taxpayer without the scrutiny or revision of the Department of National Revenue. Provincial figures contain an unavoidable bias in favour of Ontario and Quebec because many large corporations operating across Canada file their returns in one or other of these two provinces.

21.—Summary Statistics for Corporations Reporting a Profit, Taxation Years 1957 and 1958

Item	1957			1958		
	Corporations Reporting	Current Year Profit	Total Tax Declared ¹	Corporations Reporting	Current Year Profit	Total Tax Declared ¹
	No.	\$'000,000	\$'000,000	No.	\$'000,000	\$'000,000
Active taxable corporations—excluding co-operatives and Crown corporations.....	51,778	3,134.8	1,135.8	55,910	3,054.9	1,054.5
Inactive corporations.....	1,330	0.6	—	1,559	1.1	0.1
Co-operatives.....	1,909	8.3	1.8	1,689	8.0	1.9
Crown corporations.....	7	22.8	9.4	7	28.9	12.3
Totals, Taxable Corporations....	55,024	3,166.5	1,147.0	59,165	3,092.9	1,068.7
Personal corporations.....	1,957	28.5	—	2,218	31.8	—
Other exempt corporations.....	3,154	22.7	—	3,308	19.4	—
Totals, Taxable and Exempt.....	60,135	3,217.6	1,147.0	64,691	3,144.1	1,068.7

¹ Includes old age security tax.

22.—Distribution of Active Taxable Corporations Reporting a Profit, by Industry and Province, Taxation Years 1957 and 1958

Industrial Group and Province	1957			1958		
	Corporations Reporting	Current Year Profit	Total Tax Declared ¹	Corporations Reporting	Current Year Profit	Total Tax Declared ¹
	No.	\$'000,000	\$'000,000	No.	\$'000,000	\$'000,000
Industrial Group						
Agriculture, fishing and forestry....	792	10.7	2.8	992	12.3	2.8
Mining.....	616	160.9	62.9	487	100.4	38.3
Manufacturing.....	11,263	1,548.2	584.4	11,598	1,439.4	528.2
Construction.....	5,485	160.2	50.4	6,502	194.3	56.7
Transportation, storage and communications.....	2,639	222.6	85.2	2,362	212.5	80.8
Public utilities.....	198	64.7	25.3	223	64.9	25.1
Wholesale trade.....	8,420	292.7	97.7	8,938	259.4	81.2
Retail trade.....	9,147	228.1	79.1	9,784	249.0	81.4
Finance.....	8,095	359.9	122.8	9,751	437.5	136.8
Service.....	5,123	87.1	25.2	5,273	85.2	23.3
Totals.....	51,778	3,134.8	1,135.8	55,910	3,054.9	1,054.5
Province						
Newfoundland.....	541	22.7	8.9	540	21.2	8.2
Prince Edward Island.....	213	4.4	1.4	146	3.3	1.0
Nova Scotia.....	1,369	43.6	16.3	1,660	38.3	13.7
New Brunswick.....	917	29.8	11.6	1,123	31.5	11.9
Quebec.....	12,741	976.3	344.7	13,602	968.4	333.3
Ontario.....	18,894	1,531.4	552.1	20,292	1,465.0	491.3
Manitoba.....	2,549	105.4	41.3	2,854	117.1	45.7
Saskatchewan.....	1,600	30.7	10.6	1,656	32.4	11.1
Alberta.....	4,341	145.6	54.6	5,271	153.5	54.7
British Columbia.....	8,613	244.8	94.2	8,766	224.3	83.6

¹ Includes old age security tax.

23.—Corporations Reporting a Profit, by Income Class and Size of Total Assets, Taxation Years 1957 and 1958

NOTE.—Figures are for corporations described as "fully tabulated", which means corporations for which sufficient information has been received for complete analyses.

Income Class and Size of Assets	1957		1958	
	Companies Reporting	Current Year Profit	Corporations Reporting	Current Year Profit
	No.	\$'000,000	No.	\$'000,000
Income Class				
Under \$5,000.....	19,825	38.0	21,936	40.2
\$5,000 under \$10,000.....	8,593	60.2	9,520	66.2
\$10,000 under \$25,000.....	14,174	233.6	14,593	243.7
\$25,000 under \$50,000.....	3,284	114.6	4,030	134.9
\$50,000 under \$100,000.....	2,058	144.3	2,046	142.7
\$100,000 under \$250,000.....	1,579	244.8	1,586	246.1
\$250,000 under \$500,000.....	664	231.1	663	232.1
\$500,000 under \$1,000,000.....	401	277.6	356	249.4
\$1,000,000 under \$5,000,000.....	333	708.5	326	650.2
\$5,000,000 or over.....	71	924.0	77	845.2
Totals.....	50,982	2,976.2	55,133	2,850.6
Total Assets				
Under \$50,000.....	11,958	45.5	25,240	134.3
\$50,000 under \$100,000.....	10,862	74.3		
\$100,000 under \$250,000.....	13,322	166.7	14,432	177.2
\$250,000 under \$500,000.....	7,275	165.7	7,377	161.8
\$500,000 under \$1,000,000.....	3,391	181.8	3,682	183.6
\$1,000,000 under \$5,000,000.....	3,094	501.3	3,272	482.6
\$5,000,000 under \$10,000,000.....	505	244.5	523	220.1
\$10,000,000 under \$25,000,000.....	298	317.7	320	324.7
\$25,000,000 under \$100,000,000.....	210	540.4	220	535.4
\$100,000,000 or over.....	67	738.3	67	631.0

Succession Duties

A history of succession duties in Canada, together with examples of the occurrences of federal duty on typical estates and of combined federal and provincial duties on typical estates, is given in the 1956 Year Book, pp. 1064-1068.

Since 1947, only Ontario and Quebec among the provinces have been levying succession duties, the other provinces having leased this field to the Federal Government under terms of the 1947, 1952 and 1957 tax rental agreements (see p. 1098); a tax abatement of 50 p.c. of the federal estate tax otherwise payable is granted in respect of property situated in a province which does not "rent" its succession duties to the Federal Government.

An outline of the Estate Tax Act passed by Parliament in 1958 is given in the 1959 Year Book, pp. 1070-1071. The Act was amended in 1960 with respect to charitable donations, life insurance and annuities.

Table 24 shows the receipts of the various governments from succession duties for the years ended Mar. 31, 1956-59.

24.—Federal and Provincial Revenue from Succession Duties, Years Ended Mar. 31, 1956-59

NOTE.—Statistics for 1948-52 are given in the 1954 Year Book, p. 1080; for 1953-54 in the 1956 edition, p. 1064; and for 1955 in the 1959 edition, p. 1071.

Province	1956	1957	1958	1959
	\$'000	\$'000	\$'000	\$'000
Federal.....	66,607	79,709	71,608	72,535
Provincial—1				
Newfoundland.....	—	—	—	—
Prince Edward Island.....	—	—	—	—
Nova Scotia.....	5	2	12	2
New Brunswick.....	—	4	—	—
Quebec.....	46,558	35,372	20,637	20,000
Ontario.....	25,463	29,161	31,980	34,000
Manitoba.....	5	6	2	3
Saskatchewan.....	10	6	9	5
Alberta.....	5	4	5	5
British Columbia.....	—	—	—	—

1 Under terms of the 1947, 1952 and 1957 Dominion-Provincial Taxation Agreements all provinces except Ontario and Quebec refrain from levying succession duties; amounts shown for other provinces are arrears. Provincial figures for 1959 are preliminary.

Subsection 4.—Subsidies and Taxation Agreements with the Provinces

Subsidies.—A brief history of certain annual payments made by the Federal Government to the provinces under the provisions of the British North America Act and subsequent arrangements entered into from time to time appears in the 1956 Year Book, pp. 1068-1069. All payments made by the Federal Government to the provinces during the year ended Mar. 31, 1958 are shown in detail in Table 6, on p. 1083.

Taxation Agreements.—Early in World War II, in order to provide revenue for heavy national expenditures and at the same time control inflationary tendencies, the provincial governments vacated the income and corporation tax fields in favour of the Federal Government for the duration of the War and a limited period thereafter, in return for a tax rental payment from the Federal Government. The Agreements of 1942 were succeeded in turn by the Agreements of 1947 and the Tax Rental Agreements of 1952. Under the 1952 Agreements, all provinces except Ontario and Quebec agreed to lease their personal and corporation income taxes, special corporation taxes and succession duties to the Government of Canada in exchange for a rental payment. Ontario, which had not entered into the 1947 Agreements, also agreed to lease personal and corporation income taxes and special corporation taxes but retained the right to levy succession duties. In 1952 the nine provinces received \$303,000,000 in tax rental payments compared with \$96,000,000 received by the eight provinces in 1951.

The Wartime Tax Agreements of 1942 are outlined in the 1946 Year Book, pp. 900-901. The 1947 and 1952 Tax Rental Agreements are outlined at pp. 1087-1090 of the 1954 edition.

With the 1952 Rental Agreements expiring at Mar. 31, 1957, conferences were held with the provinces in April and October 1955 and March 1956 to discuss new financial arrangements. At the October meeting the Federal Government put forward certain suggestions for discussion. These were revised and became part of the actual proposals made by letter on Jan. 6, 1956. Some further revisions in detail were made following a meeting with the provinces on Mar. 9, 1956, and the final proposals were incorporated in a Bill presented to Parliament in July 1956, entitled the Federal-Provincial Tax-Sharing Arrangements Act. This Act received Royal Assent on July 31, 1956.

The current fiscal arrangements differ substantially in principle from those in effect before Apr. 1, 1957. Provision is still made for tax rental agreements in the fields of individual and corporation income tax and succession duties, but the tax rental payment to a province is now the estimated yield at certain agreed or "standard" rates of the taxes rented by that province to the Federal Government. The fiscal aid components of the payments which were formerly contained in the total tax rental payment under the 1952-57

agreements are now dealt with separately by means of "tax equalization payments". These tax equalization payments are so calculated that, when added to the tax rental payments, they raise the total per capita return in each province to the average per capita return of standard taxes in the two provinces that have the highest per capita yield of standard taxes.

The standard taxes are: (a) individual income tax at 10 p.c. of the federal tax (raised to 13 p.c. for 1958-59 and 1959-60); (b) corporation income tax at 9 p.c. of corporation taxable income; and (c) succession duties at 50 p.c. of the federal duties averaged over a three-year period.

In addition, provincial revenue stabilization payments are provided which will support the payments to a province at a level determined by the greatest of: (a) the adjusted 1957 tax rental payment, which is the amount payable in 1956-57 to any province whether under an agreement or not, adjusted for any population changes in the year in question; (b) the projected tax rental payment, which is the amount that would be payable to any province in a year if the 1952 Tax Rental Agreements were to be extended into the year in question; and (c) the basic stabilization amount, which for 1958-59 was 95 p.c. of the amount of tax equalization payments, provincial revenue stabilization payments and current tax rental payments applicable to the province in 1957-58; and, for subsequent years, 95 p.c. of the average of such payments in the two previous years.

The tax equalization payments and the provincial revenue stabilization payments are payable to a province regardless of any action they may take in these tax fields. Tax rental payments are subject to agreement.

Rental agreements covering all three tax fields have been entered into with all provinces except Quebec and Ontario. Ontario has rented the individual income tax to the Federal Government but levies its own corporation income and corporation taxes and succession duties. Quebec continues to levy all three taxes. Where a province levies its own taxes, there is a reduction of federal tax provided at the standard rate noted above.

Following a Dominion-Provincial Conference in November 1957, the Federal Government increased the standard individual income tax from 10 p.c. to 13 p.c. This was done on an interim basis for the fiscal year commencing Apr. 1, 1958 only. However, the higher rate was subsequently extended for one additional year and a further measure was introduced in the House of Commons on Apr. 1, 1960 to extend the rate for another two years ending with the expiry of the current Tax-Sharing Arrangements on Mar. 31, 1962.

The proposed amendments to the Federal-Provincial Tax-Sharing Arrangements Act, introduced on Apr. 1, 1960, also provide alternative arrangements for payment of federal grants to institutions of higher learning to be effective for two years ending Mar. 31, 1962. These grants, paid either under the authority of the Federal-Provincial Tax-Sharing Arrangements Act through the Canadian Universities Foundation or, under certain circumstances, when a province so desires, directly by that province. Where a province that does not rent its corporation taxes to the Federal Government chooses to pay the university grants directly, its corporate taxpayers will receive an abatement from the federal income tax of 10 p.c. instead of 9 p.c. Where the loss of revenue to the federal treasury by reason of the 1-p.c. increase in abatement exceeds the cost of university grants of \$1.50 per capita in the province concerned, a deduction equivalent to this excess will be made by the Federal Government from other payments made to the province under the Federal-Provincial Tax-Sharing Arrangements Act. On the other hand, if the cost of such increased abatement of 1 p.c. in the corporation tax rate should be less than university grants of \$1.50 per capita, the Federal Government will pay the difference to the provincial government for the benefit of the universities.

The Federal-Provincial Tax-Sharing Arrangements Act was amended in 1958 to provide for special grants, known as the Atlantic Provinces Adjustment Grants, to be paid to the four Atlantic Provinces for (each of the) four years commencing Apr. 1, 1958, and totalling \$25,000,000 annually divided as follows: Nova Scotia, New Brunswick and Newfoundland each \$7,500,000, and Prince Edward Island \$2,500,000.

Additional Grants to Newfoundland.—The Newfoundland Additional Grants Act of 1959 provides for the following grants to be paid to the Province of Newfoundland: for the fiscal year (ended Mar. 31) 1957-58, \$6,600,000; 1958-59, \$6,950,000; 1959-60, \$7,300,000; 1960-61, \$7,650,000; 1961-62, \$8,000,000. These payments are made following the recommendations of a Royal Commission appointed pursuant to the Terms of Union of Newfoundland with Canada. The Commission's report, dated May 31, 1958, deals with "the form and scale of additional financial assistance, if any, that might be required by the Government of the Province of Newfoundland to enable it to continue public services at the levels and standards reached subsequent to the date of the Union, without resorting to taxation more burdensome, having regard to capacity to pay, than that obtaining generally in the region comprising the Maritime Provinces of Nova Scotia, New Brunswick, and Prince Edward Island".

Section 3.—Provincial Public Finance

Provincial government accounting and reporting practices vary considerably so that certain adjustments to the *Public Accounts* figures are required in order to produce comparable statistics. For example, transactions relating to a specific function are sometimes excluded from ordinary account; therefore special or administrative funds of this nature have been added to provincial ordinary account in the tables of this Section.

Fiscal periods are as nearly coincident as possible in view of the variations in provincial fiscal year-ends prior to the 1951 fiscal year; as of 1952 the fiscal years of all provinces end on Mar. 31. Figures for Newfoundland are included from 1949, for Yukon Territory from 1950, and for the Northwest Territories from 1955.

Subsection 1.—Revenue and Expenditure of Provincial Governments

Table 25 shows net revenue and expenditure of provincial governments for the years ended Mar. 31, 1952-58, and Tables 26 and 27 give details of such revenue and expenditure for the fiscal years ended in 1957 and 1958. "Net general revenue" and "net general expenditure" are arrived at by first analysing the combined revenues and expenditures of capital account, current or ordinary account and those working capital funds and special funds for which separate accounts are kept. Then the following types of revenue are deducted from revenue and offset against related expenditure: interest, premium, discount and exchange; institutional revenue; grants-in-aid and shared-cost contributions from other governments; and capital revenue. Table 28 gives details of the amounts paid to other governments by provincial governments, according to nature of payment.

25.—Net Revenue and Expenditure of Provincial Governments, Years Ended Mar. 31, 1952-58

Province or Territory	1952	1953	1954	1955	1956	1957	1958
NET GENERAL REVENUE							
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	25,183	31,734	31,641	32,851	33,534	36,870	39,479
Prince Edward Island..	6,048	7,288	7,671	8,154	8,044	7,570	9,441
Nova Scotia.....	38,794	46,647	49,348	51,418	54,329	57,881	64,480
New Brunswick.....	40,697	46,555	49,220	50,788	52,783	57,335	61,616
Quebec.....	277,406	284,703	299,417	339,108	412,745	445,930	515,384
Ontario.....	303,842	364,507	370,897	399,058	431,802	481,775	594,480
Manitoba.....	46,073	55,456	55,822	56,706	59,349	66,120	73,594
Saskatchewan.....	74,777	91,094	98,415	99,651	102,702	121,872	135,965
Alberta.....	105,751	144,504	185,851	175,097	225,326	241,317	246,013
British Columbia.....	157,102	185,368	186,337	199,658	230,773	273,059	281,796
Yukon Territory.....	1,187	..	1,460	1,632	1,785	1,703	2,056
Northwest Territories..	..	..	..	707	916	1,125	1,260
Totals.....	1,076,860	1,257,856	1,336,079	1,414,828	1,614,088	1,792,557	2,025,573

**25.—Net Revenue and Expenditure of Provincial Governments, Years Ended
Mar. 31, 1952-58—concluded**

Province or Territory	1952	1953	1954	1955	1956	1957	1958
	NET GENERAL EXPENDITURE ¹						
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	29,895	28,881	32,802	39,086	42,419	44,346	47,878
Prince Edward Island..	7,865	7,064	7,167	8,822	10,343	10,094	10,766
Nova Scotia.....	49,148	46,464	51,254	52,638	57,688	70,756	74,474
New Brunswick.....	40,038	44,927	47,813	50,990	54,451	59,339	63,486
Quebec.....	261,196	313,117	310,999	349,983	399,713	433,459	493,374
Ontario.....	335,817	372,019	384,215	420,999	488,932	552,155	656,481
Manitoba.....	42,725	42,023	46,702	48,552	51,940	62,867	75,615
Saskatchewan.....	71,781	80,187	85,783	96,145	100,781	110,132	124,353
Alberta.....	81,965	103,583	118,150	138,303	159,375	170,000	199,420
British Columbia.....	152,250	168,875	171,780	178,585	207,490	257,641	287,465
Yukon Territory.....	1,163	..	1,154	1,313	1,405	2,143	2,070
Northwest Territories..	..	..	..	641	728	886	1,605
Totals.....	1,073,843	1,207,140	1,257,819	1,386,057	1,575,265	1,773,818	2,036,987

¹ Excludes debt retirement.

**26. Details of Net General Revenue of Provincial Governments, Years Ended Mar. 31,
1957 and 1958**

Source	1957	1958	Source	1957	1958
	\$'000	\$'000		\$'000	\$'000
Taxes—			Other Governments—		
Corporations.....	20,265	40,721	Government of Canada—		
Income—			Share of income tax on electric		
Corporations.....	62,161	214,438	power utilities.....	6,613	7,261
Individuals.....	36,359	41,295	Subsidies.....	22,810	21,996
Property.....	8,030	8,311	Totals, Government of Canada..	29,423	29,257
Sales—			Municipalities.....	240	—
Alcoholic beverages.....	2,185	2,285	Totals, Other Governments.....	29,663	29,257
Amusements and admissions..	20,334	20,608			
Motor fuel and fuel oil.....	300,546	346,570	Government Enterprises and		
Tobacco.....	16,668	19,611	Other Funds—		
General.....	177,897	183,159	Liquor profits.....	153,801	164,544
Other commodities and ser-			Other.....	4,314	3,911
vices.....	5,406	6,085	Other Revenue.....	760	1,441
Succession Duties.....	64,555	52,645	Totals, excluding Non-revenue		
Other.....	18,368	19,266	and Surplus Receipts.....	1,790,170	2,022,725
Total, Taxes.....	732,774	954,994			
Federal Tax Rental Agreements..	366,328	354,354	Non-revenue and Surplus Re-		
Privileges, Licences and Permits—			ceipts—		
Liquor control and regulation...	33,343	40,514	Refund of previous years' ex-		
Motor vehicle.....	127,503	139,729	penditure.....	850	1,199
Natural resources.....	287,905	278,010	Repayment of advances credited		
Other.....	20,086	20,307	to revenue.....	1,464	1,570
Totals, Privileges, Licences and			Other.....	73	79
Permits.....	468,837	478,560	Totals, Non-revenue and Surplus		
Sales and Services.....	27,083	28,435	Receipts.....	2,387	2,848
Fines and Penalties.....	6,610	7,229	Totals, Net General Revenue..	1,792,557	2,025,573

27.—Details of Net General Expenditure of Provincial Governments, Years Ended Mar. 31, 1957 and 1958

Function	1957	1958	Function	1957	1958
	\$'000	\$'000		\$'000	\$'000
General Government—			Education—concluded		
Executive and administrative...	60,489	76,244	Universities, colleges and other schools...	67,289	103,868
Legislative.....	8,788	6,640	Education of the handicapped...	3,798	4,545
Research, planning and statistics.....	552	473	Superannuation and pensions.....	11,584	16,072
Totals, General Government.....	69,829	83,357	Other.....	7,749	8,238
			Totals, Education.....	362,960	453,003
Protection of Persons and Property—			Natural Resources and Primary Industries—		
Law enforcement.....	18,712	21,474	Fish and game.....	13,469	14,810
Corrections.....	22,266	28,739	Forests.....	41,923	47,833
Police protection.....	23,756	27,864	Land: settlement and agriculture	54,129	56,903
Other.....	26,859	30,081	Minerals and mines.....	9,511	11,701
Totals, Protection of Persons and Property.....	91,593	108,158	Water resources.....	6,924	8,319
			Other.....	6,621	7,324
Transportation and Communications—			Totals, Natural Resources and Primary Industries.....	132,577	146,890
Airways.....	5	37			
Highways, roads and bridges....	556,831	582,519	Trade and Industrial Development	9,444	10,446
Railways.....	56	66	Local Government Planning and Development.....	3,718	4,497
Telephone, telegraph and wireless	21	21	Debt Charges excluding Debt Retirement.....	55,308	54,844
Waterways.....	4,542	4,927	Contributions to Local Governments—		
Other.....	27	25	Shared-revenue contributions....	11,015	11,923
Totals, Transportation and Communications.....	561,482	587,595	Subsidies.....	28,985	41,347
			Other.....	864	1,036
Health and Social Welfare—			Totals, Contributions to Local Governments.....	40,864	54,306
Health—					
General.....	5,678	6,242	Contributions to Government Enterprises.....	7,928	10,050
Public health.....	17,840	20,829	Other Expenditure.....	9,575	26,697
Medical, dental and allied services.....	9,760	10,382	Totals, excluding Non-expense and Surplus Payments.....	1,767,310	2,027,993
Hospital care.....	228,261	264,580			
Totals, Health.....	261,539	302,033	Non-expense and Surplus Payments—		
			Advances charged to revenue....	1,244	808
Social Welfare—			Refunds of previous years' revenue.....	373	411
Aid to aged persons.....	47,180	54,461	Other.....	4,891	7,775
Aid to blind persons.....	1,808	2,002	Totals, Non-expense and Surplus Payments.....	6,508	8,994
Aid to unemployed employables and unemployables....	24,446	30,132	Totals, Net General Expenditure (excluding debt retirement).....	1,773,818	2,036,987
Mothers' allowances.....	22,758	31,075			
Child welfare.....	17,956	19,883			
Labour.....	3,726	4,266			
Other.....	25,460	26,262			
Totals, Social Welfare.....	143,334	168,081			
Totals, Health and Social Welfare.....	404,873	470,114			
Recreational and Cultural Services.....	17,159	18,034			
Education—					
Schools operated by local authorities.....	272,540	320,280			

28.—Specified Amounts Paid to Other Governments by Provincial Governments, Year Ended Mar. 31, 1958

Nature of Payment	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Canada
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Paid to Local Governments—													
Shared-revenue contributions ¹	—	—	9	—	—	894	—	—	11,020	—	—	—	11,923
Subsidies.....	610	121	1,011	3,468	—	22,945	1,997	—	62	11,020	56	—	41,347
Grants in lieu of local taxes on provincial government property ²	7	5	—	—	—	788	144	—	78	—	—	—	1,022
Other.....	—	—	—	—	—	—	—	—	—	14 ³	—	—	14
Grants-in-Aid and Shared-Cost Contributions—													
Corrections.....	—	—	—	—	—	940	—	—	—	—	—	—	960
Police protection.....	—	—	—	20	—	187	—	—	—	—	—	—	187
Fire protection.....	30	2	—	—	936	131	—	—	—	—	—	—	1,099
Other protection.....	—	—	—	—	407	10	—	—	—	—	—	—	417
Highways, roads and bridges.....	157	14	—	217	—	51,367	2,811	4,801	4,002	320	—	59	67,767
Public health.....	106	—	—	—	30	2,011	60	195	870	246	—	—	3,518
Medical, dental and allied services.....	—	—	—	—	—	32	86	—	—	—	—	—	118
Hospital care ⁴	—	—	—	—	—	—	1,332	—	2,361	—	—	—	4,193
Aid to aged persons (homes).....	—	—	—	—	—	5,346	—	5	—	4	—	—	5,365
Aid to unemployed employables and unemployables.....	—	14	—	36	—	6,688	1,220	1,695	1,142	4,119	—	19	14,933
Child welfare.....	—	—	—	114	—	3,001	243	—	463	602	—	—	4,423
Other health and social welfare.....	—	—	—	—	—	—	13	—	—	—	—	—	13
Parks, beaches and other recreational areas.....	20	—	—	—	50	350	—	—	14	—	—	—	434
Physical culture.....	—	—	—	—	—	408	—	1	—	—	—	—	409
Schools operated by local authorities ⁵	6	1,210	11,221	7,596	61,140 ⁷	98,534	11,959	17,371	44,423	40,084	8	70 ⁸	293,608
Lands—settlement and agriculture.....	—	—	—	—	155	630	237	111	150	17	—	—	1,300
Local government planning and development.....	—	—	—	85	—	54	—	—	—	—	—	—	129
Civil defence.....	—	—	27	32	—	446	—	—	66	283	—	—	897
Housing.....	—	—	—	—	—	—	—	—	—	—	—	—	—
Other payments.....	3	—	—	—	—	—	—	—	—	—	—	—	—
Other payments.....	4	—	—	—	86	—	55 ⁹	—	—	—	—	—	147
Totals, Paid to Local Governments.....	937	1,366	12,268	11,568	66,823	194,765	20,157	24,179	65,151	56,709	56	204	454,183
Paid to Government of Canada—													
Police services—RCMP.....	380	95	523	385	—	—	674	884	1,039	1,311	—	—	5,271
Totals, Paid to All Governments.....	1,297	1,461	12,791	11,953	66,823	194,765	20,831	25,063	66,190	58,020	56	204	459,454

¹ N.S.—Crown land leases; Ont.—municipal share of liquor licences; Alta.—share of gasoline tax \$9,990,000, and share of liquor fines \$150,000.
² Excludes grants in lieu of taxes paid by provincial government enterprises.
³ Reimbursement of taxes newly incorporated or extended municipalities.
⁴ Excludes amounts paid directly to municipal hospital boards.
⁵ Includes grants paid directly to 60 teachers' P.E.I., N.B. and Que.
⁶ Excludes \$4,731,000 expenditures by the province to meet debt charges on various denominational basis; grants to denominational schools operated by the territorial government and by religious denominations.
⁷ Excludes \$4,731,000 expenditures by the province to meet debt charges on various denominational basis; grants to denominational schools operated by the territorial government and by religious denominations.
⁸ Excludes \$4,731,000 expenditures by the province to meet debt charges on various denominational basis; grants to denominational schools operated by the territorial government and by religious denominations.
⁹ Emergency flood relief.

Subsection 2.—Debt of Provincial Governments

Table 29 shows total bonded debt, by province, as at Mar. 31, 1954-59. Table 30 shows that the majority of bond issues are payable in Canada, but that the portion payable in New York only increased from 19 p.c. in 1957 and 1958 to nearly 23 p.c. in 1959. Table 31 provides details of total direct and indirect debt of provincial governments as at Mar. 31, 1959.

29.—Gross Bonded Debt (exclusive of Treasury Bills) of Provincial Governments, as at Mar. 31, 1954-59

Province and Year	Bonded Debt	Average Interest Rate	Average Term of Issue	Province and Year	Bonded Debt	Average Interest Rate	Average Term of Issue
	\$'000	p.c.	yrs.		\$'000	p.c.	yrs.
Newfoundland—				Ontario—concluded			
1954.....	15,000	4.27	14.0	1956.....	1,021,237 ¹	3.57	21.6
1955.....	27,000	4.15	16.7	1957.....	1,195,633 ¹	3.67	21.1
1956.....	43,000	3.72	18.3	1958.....	1,278,357 ¹	3.75	20.4
1957.....	43,000	4.00 ²	18.3	1959.....	1,576,751 ¹	3.87	19.8
1958.....	54,500	4.33	18.5	Manitoba—			
1959.....	56,500	4.44	18.7	1954.....	161,750	3.77	18.0
Prince Edward Island—				1955.....	172,560	3.71	17.9
1954.....	19,850	3.33	12.2	1956.....	179,300	3.66	18.2
1955.....	18,650	3.24	12.6	1957.....	178,776	3.71	17.9
1956.....	19,350	3.29	12.7	1958.....	177,302	3.67	17.1
1957.....	19,600	3.55	13.6	1959.....	204,026	3.37	14.3
1958.....	21,600	3.61	14.1	Saskatchewan—			
1959.....	22,096	3.56	13.5	1954.....	164,293	3.91	20.0
Nova Scotia—				1955.....	177,337	3.76	19.4
1954.....	203,496	3.45	17.1	1956.....	204,566	3.68	19.0
1955.....	208,011	3.47	17.5	1957.....	231,156	3.78	18.8
1956.....	220,636	3.49	18.2	1958.....	285,315	4.01	17.9
1957.....	228,035	3.65	18.5	1959.....	339,003	4.14	19.1
1958.....	246,660	3.70	18.3	Alberta—			
1959.....	267,699	3.77	18.1	1954.....	81,043	2.87	15.7
New Brunswick—				1955.....	78,320	2.87	16.0
1954.....	202,019	3.78	17.8	1956.....	75,517	2.86	16.2
1955.....	207,655	3.65	17.6	1957.....	72,634	2.85	16.4
1956.....	217,237	3.64	17.7	1958.....	20,965	2.84	16.1
1957.....	237,415	3.74	17.7	1959.....	20,327	2.83	16.2
1958.....	231,221	3.78	18.0	British Columbia—			
1959.....	230,081	3.82	17.9	1954.....	222,129	3.37	20.8
Quebec—				1955.....	206,174	3.31	21.0
1954.....	479,033 ¹	3.37	17.1	1956.....	193,572	3.30	21.8
1955.....	477,083 ¹	3.28	16.7	1957.....	181,673	3.33	22.6
1956.....	467,558 ¹	3.29	17.3	1958.....	165,489	3.23	22.1
1957.....	481,734	3.37	17.5	1959.....	162,770	3.24	22.3
1958.....	480,734	3.37	17.5	Totals—			
1959.....	469,384	3.35	17.3	1954.....	2,560,844	3.53	19.5
Ontario—				1955.....	2,552,209	3.50	19.5
1954.....	1,012,231 ¹	3.56	21.9	1956.....	2,640,973	3.50	19.5
1955.....	979,419 ¹	3.59	22.2	1957.....	2,869,656	3.59	19.5
				1958.....	2,962,143	3.68	19.1
				1959.....	3,348,637	3.76	18.8

¹ Excludes bonds assumed by the province.

30.—Gross Bonded Debt¹ (exclusive of Treasury Bills) of Provincial Governments, by Place of Payment, as at Mar. 31, 1954-59

Payable in—	1954	1955	1956	1957	1958	1959
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Canada.....	1,623,245	1,683,017	1,766,728	1,952,308	2,100,360	2,315,297
London (England).....	9,587	9,587	9,587	9,587	2,312	2,312
London and Canada.....	2,974	2,974	2,974	2,974	2,974	2,974
New York (U.S.A.).....	472,973	452,825	483,325	547,475	570,767	754,245
New York and Canada.....	284,614	241,804	221,964	205,921	141,079	132,846
London, New York, and Canada.....	167,451	162,002	156,395	151,391	144,651	140,963
Totals.....	2,560,844	2,552,209	2,640,973	2,869,656	2,962,143	3,348,637

¹ Excludes bonds assumed by the provinces.

31.—Provincial Government Direct and Indirect Debt (less Sinking Funds), as at Mar. 31, 1958

Direct and Indirect Debt		Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	Total
		\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Direct Debt													
Funded Debt—													
Bonded debt.....	54,500	21,600 ¹	246,600	231,221	480,734	1,279,257 ²	177,302	285,315	20,965	165,489	—	—	2,963,043
Less sinking funds.....	5,501	4,822	39,033	55,464	146,786	197,003	46,951	35,296	—	88,173	—	—	619,029
Net bonded debt.....	48,999	16,778	207,627	175,757	333,948	1,082,254	130,351	250,019	20,965	77,316	—	—	2,344,014
Treasury bills.....	—	—	—	—	—	—	13,996	24,436	9,209	18,267	—	—	65,908
Net Funded Debt.....	48,999	16,778	207,627	175,757	333,948	1,082,254	144,347	274,455	30,174	95,583	—	—	2,409,922
Short-term treasury bills ⁴	—	2,234 ⁵	—	10,000	—	—	26,700	3,000	—	—	—	—	39,700
Savings deposits and certificates.....	—	4,233	6,994	2,183	—	—	9,076	—	—	—	—	—	2,256
Temporary loans and overdrafts.....	1,984	—	—	—	—	—	—	—	—	—	—	—	24,470
Accounts and Other Payables—	—	—	—	—	—	—	—	—	—	—	—	—	—
Trust funds and other deposits.....	3,128	136	1,706	652	10,514	73,640	2,197	—	—	—	12,371	72	101,288
Other.....	—	983	5,857	5,155	27,128	80,888 ⁶	2,191	2,689	14,146	25,753	2,043	2,043	169,961
Accrued interest and other accrued expenditure.....	206	182	2,452	3,339	4,536	13,921	5,717	3,055	191	1,471	19	19	35,089
Totals, Direct Debt (less Sinking Funds).....	54,317	24,546	224,636	197,086	376,126	1,250,703	190,228	283,199	44,533	135,178	2,134	2,134	2,782,686
Indirect Debt													
Guaranteed bonds or debentures.....	12,433	930	3,983	10,682	558,759	1,348,156	40,250	4,950	—	—	363,613	—	2,343,756
Less sinking funds.....	—	—	178	324	7,046	18,020	50	—	—	—	12,920	—	38,538
Net guaranteed bonds or debentures.....	12,433	930	3,805	10,358	551,713	1,330,136	40,200	4,950	—	—	350,693	—	2,305,218
Guaranteed bank loans.....	4,819	403	4,077	21,900	643	4,618	—	275	2,022	31,287	—	—	70,044
Municipal Improvement Assistance Act loans.....	—	2	300	153	1,007	—	21	194	182	457	—	—	2,352
Other guarantees.....	27,608 ⁷	—	—	—	—	—	20,000	1,982	—	—	—	—	49,190
Totals, Indirect Debt (less Sinking Funds).....	44,860	1,335	8,188	32,411	553,363	1,334,754	60,221	7,001	2,204	382,467	—	—	2,426,804
Totals, Direct and Indirect Debt (less Sinking Funds).....													
Direct debt (less sinking funds) per capita ⁸	99,177	25,881	232,824	229,497	929,489	2,585,457	250,449	290,200	46,737	517,645	2,134	2,134	5,209,490
Indirect debt (less sinking funds) per capita ⁸	124.01	245.46	316.39	341.57	77.01	215.53	218.65	318.92	37.08	87.55	164.15	164.15	163.23
Indirect debt (less sinking funds) per capita ⁸	102.42	13.35	11.53	56.17	113.30	230.01	69.22	7.88	1.84	247.71	—	—	142.35

¹ Includes \$50,000 bonds issued by the Provincial Sanatorium Commission.² Includes bonds assumed: Ont. \$900,000.³ Having a term of more than two years.⁴ Includes trust deposits not separable from personal savings deposits.⁵ Includes \$79,106,000 net liability of the province re Province of Ontario Savings Office.⁶ Based on estimated population as at June 1, 1958 (see p. 196).⁷ Deposits in the Newfoundland Savings Bank.

Section 4.—Municipal Public Finance

Subsection 1.—Municipal Assessed Valuations and Taxation

Table 32 shows municipal assessed valuations and total exemptions, by province, for the year 1957 together with local taxes levied by municipalities and by some school authorities and total taxes outstanding at the end of the year. Assessment figures in the various provinces are not entirely comparable as there are still variations in methods, schedules and rates, not only between provinces but also between municipalities within the same province.

32.—Municipal Assessed Valuations and Taxation, by Province, 1957

Item	New- foundland ¹	Prince Edward Island	Nova Scotia	New Brunswick	Quebec	Ontario
Assessed Valuations						
Taxable Valuations on which Taxes are Levied—						
Real property.....\$'000	7,323	29,590	490,747	359,101	6,448,193	7,047,527
Personal property.....\$'000	—	6,434	76,872	93,904	...	...
Business.....\$'000	2,681	7,458	27,850	23,385	..	874,204
Other ².....\$'000	—	—	15,329	4,092	—	—
Totals.....\$'000	10,004	43,482	610,798	480,482	6,448,193	7,921,731
Total exemptions ³.....\$'000	..	10,050 ⁴	310,797	..	1,726,290 ⁵	1,324,232 ⁴
Taxation						
Tax levy.....\$'000	2,964	1,991	27,478	23,585	253,239	435,311
Tax Collections, Current and Arrears—						
Total.....\$'000	2,793	1,985	26,557	22,625	..	428,610
Percentage of levy.....p.c.	94.2	99.7	96.6	95.9	..	98.5
Taxes receivable, current and arrears.\$'000	1,432	556	8,275	8,504	31,455	47,250
Percentage of levy.....p.c.	48.3	27.9	30.1	36.1	12.4	10.9
	Manitoba	Saskatch- ewan	Alberta	British Columbia	Yukon ⁶	N.W.T. ⁷
Assessed Valuations						
Taxable Valuations on which Taxes are Levied—						
Real property.....\$'000	885,557	1,025,689	1,316,770	1,415,936	517	3,288
Personal property.....\$'000	7,283	...	48,722	...	...	...
Business.....\$'000	38,569	50,962	61,649	..	—	2,092
Other ².....\$'000	—	294	—	—	—	—
Totals.....\$'000	931,409	1,076,945	1,427,141	1,415,936	517	5,380
Total exemptions ³.....\$'000	165,327 ⁸	560,323	257,713 ⁴	450,577 ⁹	..	513

For footnotes, see end of table.

32.—Municipal Assessed Valuations and Taxation, by Province, 1957—concluded

Item	Manitoba	Saskatch- ewan	Alberta	British Columbia	Yukon ⁶	N.W.T. ⁷
Taxation						
Tax levy.....\$'000	54,731	66,846	84,302	87,100	132	288
Tax Collections, Current and Arrears—						
Total.....\$'000	53,339	66,585	83,226	86,996	120	253
Percentage of levy.....p.c.	97.5	99.6	98.7	99.9	90.9	87.8
Taxes receivable, current and arrears \$'000	12,196	19,972	20,299	5,017	52	73
Percentage of levy.....p.c.	22.3	29.9	24.1	5.8	39.4	25.3

¹ City of St. John's only. ² Includes: N.S.—household tax, Halifax; N.B.—occupancy tax, Fredericton, and rentals tax, Moncton; Sask.—special franchise. ³ Total of valuations assessed but exempt from taxation; excludes exempt property not assessed. ⁴ Incomplete. ⁵ Excludes permissive exemptions. ⁶ City of Dawson only. ⁷ Yellowknife only. ⁸ Excludes rural municipalities. ⁹ Excludes partial statutory and permissive exemptions.

Because of the considerable differences in the division of responsibility for services between the provincial governments and their respective municipalities, extreme caution should be exercised in using the figures in Table 32 as a basis for interprovincial comparisons of the relative burden of municipal taxation. Also, in Saskatchewan municipalities are required to levy certain taxes for and on behalf of the provincial government and for other special purposes for which there is no comparable situation in other provinces. The amounts of such taxes excluded in the Saskatchewan municipal levies in Table 32 are as follows:—

Tax	1953	1954	1955	1956	1957
	\$	\$	\$	\$	\$
SASKATCHEWAN—					
Hail.....	2,863,832	2,522,027	2,872,218	2,684,147	2,290,566
Telephone.....	863,634	900,545	904,568	897,318	941,769
Drainage.....	6,794	7,368	7,593	2,834	11,450
TOTALS.....	3,734,260	3,429,940	3,784,379	3,584,299	3,243,785

Subsection 2.—Municipal Revenue, Expenditure and Debt

Tables 33, 34 and 35 show comparative totals and details of gross ordinary revenue and expenditure of municipal governments, by province. Table 36 sets out the direct and indirect debt of local governments for the year 1957. The amounts shown include debt incurred for general and school purposes, debenture debt incurred for and by utilities, and debenture debt incurred by certain special areas organized to provide specific local services.

33.—Gross Ordinary Revenue and Expenditure of Municipal Governments, by Province, Fiscal Years Ended Nearest Dec. 31, 1957

Province	Gross Ordinary Revenue	Gross Ordinary Expenditure	Province or Territory	Gross Ordinary Revenue	Gross Ordinary Expenditure
	\$'000	\$'000		\$'000	\$'000
Newfoundland.....	4,913	4,976	Saskatchewan.....	87,165	86,384
Prince Edward Island.....	2,452	2,382	Alberta.....	125,857	124,133
Nova Scotia.....	35,237	34,996	British Columbia.....	128,431	125,131
New Brunswick.....	31,212	30,672	Yukon.....	273	271
Quebec.....	318,613	319,311	Northwest Territories.....	492	430
Ontario.....	605,519	596,084			
Manitoba.....	74,120	73,418	Totals.....	1,414,284	1,398,188

34.—Details of Gross Ordinary Revenue of Municipal Governments, Fiscal Years Ended Nearest Dec. 31, 1957

Source	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Taxes—													
Municipal Purposes—													
Real property.....	1,701	427	9,851	2,905	82,010	207,306	23,163	29,135	35,797	42,761	132	135	435,023
Personal property.....	7	159	2,462	3,887	—	—	—	—	1,608	—	—	—	8,123
Business.....	676	205	1,310	1,463	16,000 ²	25,701 ²	4,127	1,452 ²	4,399	2,715	—	3	57,998
Poll.....	100	125	946	1,914	—	181	12	795	87	—	—	8	4,108
Amusement.....	120	—	—	—	2,400 ²	—	—	315	—	—	—	—	2,835
Sales.....	342	—	—	—	34,897	—	—	381	—	—	—	—	36,023
Household and tenant.....	—	—	268	193	—	—	—	403	—	—	—	—	461
Other.....	18	—	—	105	1,695	—	—	545	—	613	—	—	2,976
Special assessments (owners' share) and charges.....	—	10	170	81	14,276	15,056	4,014	1,624	6,855	4,182	—	32	46,300
School purposes.....	—	1,065	12,471	13,337	101,961	187,067	23,034	32,637	35,646	36,829	—	113	444,160
Totals, Taxes.....	2,964	1,991	27,478	23,585	253,239	435,311	54,731	66,846	84,302	87,100	132	288	1,037,967
Licences and permits.....	99	42	331	226	5,224	6,040	1,155	1,640	1,911	5,051	31	9	21,759
Interest, tax penalties, etc.....	1	12	311	196	3,560	4,497	965	1,163	1,481	1,560	3	2	13,751
Contributions, Grants and Subsidies—													
Governments.....	843	192	3,642	4,721	6,439	93,890	8,448	7,033	19,666	19,026	82	186	164,168
Government enterprises.....	146	114	733	473	16,795	4,734	2,264	3,936	5,833	2,419	4	—	37,451
Other.....	128	1	6	121	662	1,526	630	339	89	347	—	—	3,949
Debtenture debt charges recoverable.....	272	42	943	1,091	20,496	27,911	3,317	2,360	5,376	3,412	—	—	65,220
Miscellaneous revenue.....	402	46	1,168	674	12,198	24,003	1,820	3,690	6,887	8,956	21	7	59,872
Totals, Revenue.....	4,855	2,449	34,612	31,087	318,613	597,912	73,339	87,097	125,545	127,871	273	492	1,404,637
Surplus from previous years.....	58	12	625	125	—	7,607	790	168	312	560	—	—	10,247
Grand Totals.....	4,913	2,452	35,237	31,212	318,613	605,519	74,129	87,165	125,857	128,431	273	492	1,414,284

¹ Included with real property.² Estimated.³ Less than \$500.

35.—Details of Gross Ordinary Expenditure of Municipal Governments, Fiscal Years Ended Nearest Dec. 31, 1957

Function	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
General government.....	639	146	2,553	2,438	23,406	38,053	4,420	5,763	6,750	8,080	57	54	97,959
Protection of persons and property.....	262	237	4,466	3,292	39,312	72,705	8,006	5,276	11,663	18,776	60	27	164,082
Public works.....	1,423	237	2,060	2,022	44,815	87,956	11,605	18,351	19,441	12,420	58	53	200,441
Sanitation and waste removal.....	478	6	831	409	8,249	26,990	2,594	2,151	4,324	4,403	34	1	50,470
Health.....	11	10	2,970	1,549	15,584	22,897	3,732	4,762	10,372	3,408	—	12	65,217
Social welfare.....	...	17	1,479	1,022	3,557	26,365	2,822	2,476	3,048	7,893	—	18	48,697
Education.....	...	1,036	10,997	11,113	68,004	155,488	21,270	31,069	28,053	34,438	...	113	361,611
Recreation and community services.....	164	56	825	596	8,814	18,631	1,530	2,283	3,516	5,417	8	11	41,851
Debt Charges—													
Debtenture.....	707	534	6,330	5,832	85,273	94,277	10,062	7,584	24,652	19,304	44	10	254,689
Other.....	166	63	863	469	3,450	15,132	129	505	504	641	—	—	21,922
Utilities and other municipal enterprises (deficits and levies).....	223	—	27	363	2,890	2,112	838	320	1,881	1,190	1	25	9,870
Provision for reserves.....	19	20	569	523	2,846	6,283	2,021	1,543	985	1,092	2	22	15,925
Capital expenditure out of revenue.....	814	7	510	211	6,366	17,448	2,581	2,963	5,859	5,964	—	70	42,793
Joint or special expenditures.....	—	—	—	—	—	4,062	327	—	506	334	—	—	5,229
Miscellaneous expenditures.....	70	13	359	685	1,745	6,704	450	1,252	2,433	1,105	7	14	14,837
Totals, Expenditure.....	4,976	2,382	34,839	30,544	319,311	595,013	72,387	86,298	124,017	125,125	271	430	1,395,593
Deficits from previous years.....	—	—	157	128	—	1,071	1,031	86	116	6	—	—	2,595
Grand Totals.....	4,976	2,382	34,996	30,672	319,311	596,084	73,418	86,384	124,133	125,131	271	430	1,398,188

36.—Debt of Municipal and School Corporations, as at Fiscal Year-Ends Nearest to Dec. 31, 1957

Direct and Indirect Debt	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.	Yukon	N.W.T.	Total
	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000	\$'000
Direct Debt (less Sinking Funds)—													
Debtenture debt.....	15,030	7,641	69,425	75,221	891,637	1,079,946	113,470	96,196	315,994	328,428	1,046	105	2,994,039
Less sinking funds.....	560	1,412	8,089	6,637	14,419	10,955	16,442	8,194	2,378	37,023	—	—	108,109
Net debtenture debt.....	14,470	6,229	61,336	68,584	877,218	1,068,991	97,028	88,002	313,616	291,405	1,046	105	2,887,930
Temporary loans and bank overdrafts....	626	246	6,905	0,303	65,756	92,062	8,096	6,119	12,769	8,227	—	—	207,109
Accounts payable and other liabilities....	1,960	369	9,021	3,576	84,091	98,065	8,947	17,016	37,737	16,500	84	92	277,458
Totals, Direct Debt (less Sinking Funds).....	17,056	6,844	77,262	78,463	1,027,065	1,259,018	114,071	111,137	364,122	316,132	1,130	197	3,372,497
Indirect Debt (less Sinking Funds)—													
Guaranteed bonds or debentures.....	—	—	997	3,400	—	7,158	3,149	—	—	—	—	—	14,704
Less sinking funds.....	—	—	231	—	—	—	—	—	—	—	—	—	231
Net guaranteed bonds or debentures.....	—	—	766	3,400	—	7,158	3,149	—	—	—	—	—	14,473
Guaranteed bank loans.....	—	—	—	—	117	—	—	—	60	—	—	—	177
Totals, Indirect Debt (less Sinking Funds).....	—	—	766	3,400	117	7,158	3,149	—	60	—	—	—	14,650
Grand Totals.....	17,056	6,844	78,028	81,863	1,027,182	1,266,176	117,220	111,137	364,182	316,132	1,130	197	3,387,147

CHAPTER XXIII.—NATIONAL ACCOUNTS AND CANADA'S INTERNATIONAL INVESTMENT POSITION

CONSPECTUS

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NOTE.—The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Section 1.—National Accounts*

The national accounts constitute a set of accounting summaries for the nation as a whole and portray economic activity in terms of transactions taking place between different sections of the economy. By combining and summarizing these operations into their various classes, information may be obtained on the functioning of the economy which is of particular interest to governments concerned with problems of full employment, taxation and prices, and to businessmen concerned with programs of investment and marketing.

This measurement of the nation's output is in terms of established market prices; hence it is necessary to keep in mind that the value of the nation's production may change because of price variations as well as through increase or decrease in volume of output.

Data are available showing volume changes in gross national expenditure in addition to the value figures. Gross national expenditure is shown in Table 3 in constant dollars (i.e., in terms of 1949 prices). Because the gross national expenditure equals the gross national product, these data also reflect volume changes in the production of goods and services as measured by the gross national product. For all other tables the data are expressed in current dollars so that year-to-year changes must be considered in relation to price changes over the period.

National accounts calculated on a quarterly basis are a logical extension of the annual national accounts and have been published since 1953. However, their preparation on a reliable and analytically useful basis is rather more difficult because of the scarcity of quarterly data, special problems arising from the measurement of farm production and problems in connection with seasonal variation.

The tables in this Section cover the more important aspects of the national income analysis in annual terms. Tables 1 and 2 show the main aggregates of national income, gross national product, gross national expenditure and their components; other tables are included to show the source and disposition of personal income, government revenue and expenditure and personal expenditure on consumer goods and services.

National Income.—Net national income at factor cost measures the current earnings of Canadian factors of production (i.e., land, labour, capital) from productive activity. It includes wages and salaries, profits, interest, net rent and net income of farm and non-farm unincorporated business.

* Prepared in the Research and Development Division, Dominion Bureau of Statistics.

Gross National Product.—Gross national product, by totalling all costs arising in production, measures the market value of all final goods and services produced in the current period by Canadian factors of production. It is equal to national income plus net indirect taxes (indirect taxes less subsidies), plus capital consumption allowances and miscellaneous valuation adjustments.

Personal Income.—Personal income is the sum of current receipts of income whether or not these receipts represent earnings from production. It includes transfer payments from government (such as family allowances, unemployment insurance benefits and war service gratuities) in addition to wages and salaries, net income of unincorporated business, interest and dividends and net rental income of persons. It does not include undistributed profits of corporations and other elements of the national income not paid out to persons.

Gross National Expenditure.—Gross national expenditure measures the same aggregate as gross national product, namely, total production of final goods and services at market prices, by tracing the disposition of production through final sales to persons, to governments, to business on capital account (including changes in inventories) and to non-residents (exports). Imports of goods and services, including net payments of interest and dividends to non-residents, are deducted since the purpose is to measure only Canadian production.

Economic Activity in 1959.—In 1958 the Canadian economy began to recover from a mild recession. Recovery continued in 1959, lifting the economy to new high levels in the first half of the year. Expansion was checked in the third quarter, largely as a result of industrial disputes in Canada and in the United States, but was resumed in the fourth. For the year as a whole the gross national product was \$34,593,000,000, about 6 p.c. higher than in 1958. With final product prices higher by about 2 p.c. the physical volume of output was estimated to be about 4 p.c. above that of the preceding year, compared with no change in the two preceding years and a postwar average increase of 4 p.c. per year.

Renewed stock-building and a reversal in the downward trend in outlays for plant and equipment provided much of the stimulus to the increase in activity. After heavy liquidation in 1958, business inventories moved to a position of modest accumulation in 1959. The shift amounted to about \$700,000, additional demand for current production. While business investment in plant and equipment was unchanged for the year as a whole, some quickening in activity in this sector became apparent during the course of the year in contrast to a moderating tendency in 1958. On the other hand, outlays for new housing, which had risen sharply in 1958, receded in the first three quarters of 1959 but recovering a little in the fourth when new mortgage money made available by the Federal Government was taken up; for the year as a whole investment in housing was slightly lower than in 1958.

The personal and the government sectors continued to contribute to the advance in output. Consumer expenditure rose nearly 6 p.c., a somewhat greater rate of increase than in the previous year. Since prices in the consumer sector rose more moderately, the gain in real consumption was more pronounced than in 1958. The increase in government expenditure on goods and services was 5 p.c. compared with one of 7 p.c. in 1958.

Recovery in Canada caused a widening of the gap on external transactions, despite an improvement in international markets for Canada's export products. After having remained unchanged for two years, exports of goods and services rose by 5 p.c. in 1959, most of the gain being concentrated in the second half of the year. Imports of goods and services, which had fallen very sharply during the recession, began to rise in the latter part of 1958 and for 1959 as a whole were 9 p.c. higher than in the preceding year. The deficit on current international account, surpassing its previous peak in 1957, rose to \$1,400,000,000 from \$1,000,000,000 in 1958.

The progress of recovery was reflected in the flow of income to the personal, business and government sectors and in the composition of important income aggregates. Personal income rose about 6 p.c., paralleling the rise in national income and matching the gain

of the previous year. Labour income rose nearly 8 p.c. reflecting the improvement in the employment situation and the continued advance in average earnings. Transfer payments rose 5 p.c., in contrast to an increase of 27 p.c. in 1958 when legislative changes in social security and higher unemployment had swollen the flow of such payments. The quickening in activity raised corporate profits 14 p.c. in contrast to a moderate decline in the preceding year. Likewise, tax revenues collected by or accruing to the Federal Government reflected expansionary influences and the government deficit was sharply reduced.

Production, Employment and Prices.—Most major industry divisions contributed to the rise in the physical volume of output in 1959. The sharpest increases were in forestry, mining and public utilities. The almost uniformly upward trend of production in 1959 was in strong contrast to the mixed and largely offsetting movements that characterized output in the previous year. A large part of the increase from 1958 levels came in the first half of 1959; the rate of increase dropped in the second half, partly as a result of industrial disputes in Canada and the delayed effects of the steel strike in the United States.

Among the primary industries, an increase of about 9 p.c. in forestry production was entirely attributable to pulpwood; output of other forest products was fractionally lower. The improvement in markets for some traditional metals and fuels and the continued expansion of output of new resource industries brought about a more than 10-p.c. increase in mining production as a whole and relatively large gains in the output of several important products; among these were nickel, copper, crude petroleum, uranium, and natural gas. Output of coal continued to decline as did that of lead and zinc. The underlying trend of mining production was strongly upward throughout the year and by December the index was nearly 15 p.c. higher than a year earlier.

The output of manufacturing industries was about 7 p.c. higher in 1959 than in 1958—durables rising about 8 p.c. and non-durables about 6 p.c. All the major divisions of manufacturing increased their production with the single exception of transportation equipment. Production in this industry was off slightly, partly as a result of the steep drop in activity in aircraft and parts. The largest increases in output were in iron and steel products, rubber products, textiles, products of petroleum and coal, and non-metallic mineral products.

The rising trend of manufacturing production in 1959 was interrupted in the third quarter, when the prolonged industrial dispute in the woods industry in British Columbia affected production of durable goods. In the closing quarter the rise in manufacturing production was restrained by November lay-offs in the automotive industry as a result of shortages of steel among United States suppliers. Nevertheless, production advanced 2 p.c. in the final quarter of the year, after allowing for seasonal factors. By the end of the year the index of manufacturing output was 6 p.c. above its level a year earlier. Non-durable manufacturing was running 4 p.c. above its previous peak reached in 1957, but durable manufacturing production was still 3 p.c. below the peak reached in July 1956.

The relatively large advance in the output of public utilities during 1958 which amounted to 14 p.c. was mainly the result of a great increase in the distribution of natural gas to final users; distribution by electric power utilities was up less than 10 p.c. The volume of construction is estimated to have been 3 p.c. lower in 1959 than in 1958. The increase in the volume of public construction did not fully offset the decline in private construction. All the service-producing industries shared in the 4.5 p.c. advance in output for the group as a whole. A 6-p.c. gain in volume in transportation, communication and storage contrasted with a 4-p.c. decline in 1958. Railway car loadings were only slightly higher but most other forms of transport handled a decidedly larger volume of business—notably shipping, air transport and oil pipelines.

These gains in production were accompanied by an increase in total employment in 1959. The number of persons with jobs was close to 3 p.c. higher than in 1958; the number with jobs in the non-farm sector was 3.5 p.c. higher. Much the greatest increase in employment took place in the service industries. Employment in the goods-producing industries rose only moderately, despite the relatively large increase in output in this sector. For example, in manufacturing a 7.0-p.c. gain in output between 1958 and 1959 was achieved

with a 1.2-p.c. increase in numbers employed. The growth in employment opportunities in 1959 reduced the number of persons without jobs and seeking work from 6.6 to 5.6 p.c. of the labour force.

Final product prices continued to move slightly upward during 1959, the advance being about the same as that which occurred during the previous year. Prices in the consumer sector rose considerably less than in the earlier year but prices of capital goods and exports rose more; prices of imports declined, reflecting for the most part a higher rate of exchange on the Canadian dollar.

Components of Gross National Expenditure.—Personal expenditure on consumer goods and services was 6 p.c. higher in 1959 than in the preceding year. The increase in spending matched fairly closely the advance in personal income, leaving a rate of personal saving that continued to be high by the standards of most postwar years. The upward trend of consumer prices moderated so that the greater part of the increased spending represented a gain in real consumption which, on a per capita basis, showed the first increase since 1956. The advance in personal spending was well distributed over the three main categories, with increases of 5 p.c. in non-durables, of more than 6 p.c. in durables and almost 7 p.c. in services. While most of the durable items showed increases, the major part of the gain was in purchases of new and used automobiles. A 45-p.c. increase in sales of British and European models, which represented 18 p.c. of all new car sales, was a notable development of the year. The rise in purchases of durable goods was accompanied by a sharp advance in consumer credit outstanding.

Government expenditure on goods and services rose to \$6,400,000,000, about 5 p.c.* higher than in 1958. All this advance was attributable to provincial and municipal governments; it reflected increased wages and salaries and larger expenditures of a capital nature. Federal Government expenditures were down slightly, reflecting a decline in outlays for defence of about 6 p.c., which was largely offset by increased spending for other purposes.

The accumulation of business inventories in 1959 amounted to \$355,000,000, in contrast to liquidation of \$323,000,000 in 1958. This shift of nearly \$700,000,000 was an important element in economic recovery and accounted for almost one-third of the increase in gross national product. Manufacturers, wholesalers and retailers all built up stocks in 1959, after having drawn them down the previous year. However, the building up of stocks did not keep pace with the growth in manufacturers' shipments or wholesalers' sales, leaving stocks shipments and stocks sales ratios lower than they had been a year earlier.

While expenditures on construction remained stable in aggregate between 1958 and 1959, the components changed significantly. Expenditures on non-residential construction dropped nearly 8 p.c. This decline, which was largely concentrated in engineering works, reflected the completion of certain large projects, such as pipelines, electric power installations and the St. Lawrence Seaway, reinforced by a fall in outlays for construction by manufacturing industries. On the other hand, outlays for machinery and equipment advanced 9 p.c. This upsurge in spending was supported by a roughly corresponding increase in both imports and domestic shipments of machinery and equipment. Business outlays for plant and equipment, though unchanged for the year as a whole, reversed their two-year downward trend early in 1959, thereby providing an important stimulus to the expansion in economic activity.

Expenditures for new housing, which had been at an unprecedentedly high level in 1958, receded a little in 1959. New housing units started fell sharply but completions remained about the same. The trend of housing was associated with the limited supply of mortgage funds from private lenders who were faced with pressing demands for credit for other purposes. In the closing quarter of the year, Federal Government mortgage lending was made available to builders and outlays for housing rose slightly.

In a situation of vigorous recovery in the United States and expanding activity in other industrialized countries, exports of goods and services rose 5 p.c. in 1959, after having remained virtually unchanged in the two preceding years. Among merchandise exports, the products of the leading primary industries were prominent in raising the total.

Thus exports of forest products, metals and minerals were up over 10 p.c. Exports of iron and its products showed the largest relative gain of all the main commodity groups, rising by almost one-third, in contrast to a decline of about one-sixth in 1958. This unusually large increase was related to the strike-induced shortage of steel in the United States. Among other products showing relatively large gains were lumber, pulp and paper, uranium and some other non-ferrous metals. These gains were partially offset by lower sales of some agricultural products, including grains and cattle; and of some manufactured products, including aircraft and ships, sales having been extraordinary high in the previous year. So far as invisible items are concerned, receipts from the tourist trade, from freight and shipping, from miscellaneous services and in the form of interest and dividends were all higher in 1959 than in 1958. On the other hand, gold production available for export was lower. Receipts from services totalled \$1,500,000,000, compared with \$1,400,000,000 the previous year.

As is characteristic of periods of rising economic activity, imports of goods and services advanced sharply in 1959, and were 9.5 p.c. higher than in 1958. Payments for merchandise imports and for services rose in about the same proportion. Despite the substantial increase in merchandise imports in 1959, the level was somewhat below the peak in 1956. The gains were well distributed and included industrial machinery, farm machinery, consumer goods, both durable and non-durable, and industrial materials to support the higher level of production and to replenish stocks. Imports of certain items, such as primary steel and steel pipe, were significantly lower. The largest increase in imports came in the second quarter of the year; thereafter there was little change, seasonal factors apart. Payments for all items in the service account were substantially higher in 1959 than in 1958. The 12-p.c. increase in remittances of interest and dividends reflected growing indebtedness, higher interest rates, and larger dividend payments to non-residents. The rise in merchandise imports, particularly from overseas countries, swelled payments for freight and shipping. Higher economic activity brought larger payments for business services. Payments on tourist account were also up considerably.

The consequence of the changes in exports and imports of goods and services described above was a deficit on current international account (on the national accounts basis) of \$1,400,000,000, compared with one of \$1,000,000,000 in 1958, and slightly above the previous peak in 1957. Of this deficit about \$400,000,000 was on merchandise account. The \$1,000,000,000 deficit on service account, continuing the steady growth characteristic of recent years, was more than double the deficit from this source in 1955. Prices of imports were slightly lower, while prices of exports were moderately higher. Thus there was some improvement in the terms of trade.

Components of Gross National Product.—Labour income rose nearly 8 p.c. in 1959, reflecting a significant advance in employment, slightly longer hours of work in some industries, and the continuing upward trend of wage rates. All the major industries shared in the gain, in contrast to the situation in 1958 when labour income failed to rise in several important industries. The largest gain, 13 p.c., occurred in the service group (community, business, personal and recreational service). Labour income in mining, manufacturing and forestry rose 5 to 6 p.c. In forestry, the gain was largely associated with the increased employment in the industry in 1959 following a sharp contraction in the previous year. In manufacturing, a small gain in employment and in hours of work contributed to the advance in labour income.

Characteristically sensitive to changes in the tempo of economic activity, corporate profits reversed their downward trend in the middle of 1958 and rose sharply in the closing quarter. For the year 1959 the gain was 14 p.c., in contrast to a decline of 3 p.c. in 1958.

Increases in profits were widespread by industry and in many cases extremely large, particularly in those industries where earnings had deteriorated during the recession. Thus profits in mining were up 18 p.c., following an even sharper decline in 1958. The same rate

of increase occurred in manufacturing industries, with especially large gains in iron and steel and in chemical products. Among the manufacturing industries, only non-metallic mineral products and products of petroleum and coal failed to record any rise in profits.

Earnings in the goods-handling industries, like the goods-producing industries, had felt the impact of the recession and responded to the upswing in economic activity in 1959. Thus profits in transportation, communication and storage rose sharply, after having fallen a little in 1958. Profits in wholesale trade also recovered from their recessionary decline. In retail trade, in the financial group and in services, profits were either unchanged or slightly lower, in contrast to the situation in 1958 when profits in the service-connected industries continued to rise.

Rents, interest, and miscellaneous investment income rose 4 p.c. in 1959. The advance in rental income continued to reflect the growth of the housing stock and a further slight increase in rents. With the rise in interest rates, interest receipts of persons and governments were sharply higher in 1959. However, a large part of these receipts take the form of interest paid on the government debt which is not included as a part of national income. Trading profits of government enterprises were slightly higher in 1959, and investment income of life insurance companies and industrial pension funds rose sharply.

Accrued net income of farm operators in 1959 was about 7 p.c. below the level of the preceding year, largely as a result of a rise in farm operating expenses. On the other hand, income of non-farm unincorporated business was somewhat higher than in 1958, with the major part of the gain originating in service industries.

The progress of recovery, reinforced by some increase in tax rates, pushed up government revenue from indirect taxes 11 p.c. The yield of indirect taxes was substantially higher for all three levels of government. Subsidies rose very sharply in 1959, largely as a result of the losses incurred under the agricultural stabilization program, so that indirect taxes less subsidies were higher by 9 p.c.

1.—National Income and Gross National Product, 1955-59

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1122, and for 1954 in the 1959 edition, p. 1089.

(Millions of dollars)

Item	1955	1956	1957	1958 ¹	1959
Wages, salaries and supplementary labour income.....	13,223	14,890	15,996	16,434	17,717
Military pay and allowances.....	394	424	476	491	496
Corporation profits before taxes ¹	2,570	2,908	2,547	2,483	2,836
Rent, interest and miscellaneous investment income.....	1,684	1,767	1,905	2,015	2,094
Accrued net income of farm operators from farm production ²	1,264	1,450	996	1,193	1,108
Net income of non-farm unincorporated business ³	1,791	1,965	2,011	2,119	2,150
Inventory valuation adjustment.....	-189	-238	-71	-33	-120
Net National Income at Factor Cost.....	20,737	23,166	23,860	24,702	26,281
Indirect taxes less subsidies.....	3,237	3,636	3,848	3,883	4,220
Capital consumption allowances and miscellaneous valuation adjustments.....	3,266	3,642	3,994	3,923	4,131
Residual error of estimate.....	-108	141	71	98	-39
Gross National Product at Market Prices.....	27,132	30,585	31,773	32,606	34,593

¹ Excludes dividends paid to non-residents.
net income of independent professional practitioners.

² Includes changes in farm inventories.

³ Includes

2.—Gross National Expenditure, 1955-59

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book p. 1124, and for 1954 in the 1959 edition, p. 1089.

(Millions of dollars)

Item	1955	1956	1957	1958*	1959
Personal expenditure on consumer goods and services.....	17,389	18,833	19,964	21,035	22,261
Government expenditure on goods and services.....	4,792	5,386	5,738	6,161	6,437
Current expenditure.....	3,758	4,126	4,356	4,772	4,837
Gross fixed capital formation.....	1,034	1,260	1,382	1,369	1,600
Business gross fixed capital formation.....	5,210	6,774	7,335	6,975	6,961
New residential construction.....	1,878	1,626	1,409	1,763	1,743
New non-residential construction.....	1,848	2,539	3,103	2,811	2,632
New machinery and equipment.....	1,884	2,609	2,823	2,401	2,626
Value of physical change in inventories.....	311	1,084	210	-435	300
Non-farm business inventories.....	155	808	311	-323	555
Farm inventories and grain in commercial channels.....	173	276	-101	-112	-55
Exports of goods and services.....	5,764	6,365	6,394	6,332	6,657
Deduct: Imports of goods and services.....	-6,443	-7,715	-7,796	-7,363	-8,062
Residual error of estimate.....	109	-142	-72	-99	39
Gross National Expenditure at Market Prices.....	27,132	30,585	31,773	32,606	34,593

3.—Gross National Expenditure in Constant (1949) Dollars, 1955-59

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1124, and for 1954 in the 1959 edition, p. 1090.

(Millions of dollars)

Item	1955	1956	1957	1958*	1959
Personal expenditure on consumer goods and services.....	14,662	15,603	15,984	16,421	17,163
Government expenditure on goods and services.....	3,563	3,794	3,832	3,985	4,031
Current expenditure.....	2,767	2,869	2,866	3,031	2,966
Gross fixed capital formation.....	796	925	966	964	1,075
Business gross fixed capital formation.....	3,962	4,891	5,085	4,738	4,601
New residential construction.....	1,040	1,110	997	1,280	1,169
New non-residential construction.....	1,365	1,816	2,107	1,877	1,683
New machinery and equipment.....	1,557	1,965	1,981	1,641	1,764
Change in inventories.....	419	955	138	-380	204
Non-farm business inventories.....	154	643	270	-228	281
Farm inventories and grain in commercial channels.....	285	307	-132	-152	-77
Exports of goods and services.....	4,969	5,340	5,360	5,440	5,557
Deduct: Imports of goods and services.....	-5,742	-6,662	-6,596	-6,198	-6,821
Residual error of estimate.....	87	-110	-54	-73	28
Gross National Expenditure in Constant (1949) Dollars.....	21,920	23,811	23,749	23,933	24,763
Index of gross national expenditure (1949=100).....	134.1	145.7	145.3	146.4	151.5

4.—Sources of Personal Income, 1955-59

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1125, and for 1954 in the 1959 edition, p. 1090.

(Millions of dollars)

Item	1955	1956	1957	1958*	1959
Wages, salaries and supplementary labour income.....	13,223	14,890	15,996	16,434	17,717
Deduct: Employer and employee contributions to social insurance and government pension funds.....	-476	-532	-589	-614	-664
Military pay and allowances.....	394	424	476	491	496
Net income received by farm operators from farm production.....	1,200	1,430	1,002	1,197	1,116
Net income of non-farm unincorporated business.....	1,791	1,965	2,011	2,119	2,150
Interest, dividends and net rental income of persons.....	1,840	1,908	2,013	2,120	2,300
Transfer Payments (excluding interest)—					
From governments.....	1,737	1,766	2,079	2,657	2,785
Charitable contributions from corporations.....	29	34	36	36	40
Totals, Personal Income.....	19,738	21,885	23,024	24,440	25,940

5.—Disposition of Personal Income, 1955-59

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1125, and for 1954 in the 1959 edition, p. 1092.

(Millions of dollars)

Item	1955	1956	1957	1958*	1959
Personal Direct Taxes—					
Income taxes.....	1,297	1,496	1,693	1,555	1,747
Succession duties.....	127	146	126	126	130
Miscellaneous taxes.....	75	90	98	113	211
Purchases of goods and services.....	17,389	18,833	19,964	21,035	22,261
Personal net savings.....	850	1,320	1,143	1,611	1,591
Totals, Personal Income.....	19,738	21,885	23,024	24,440	25,940

6.—Personal Expenditure on Consumer Goods and Services, 1955-59

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1126, and for 1954 in the 1959 edition, p. 1092.

(Millions of dollars)

Item	1955	1956	1957	1958*	1959
Foods.....	4,236	4,571	4,920	5,225	5,401
Tobacco and alcoholic beverages.....	1,181	1,278	1,370	1,456	1,555
Clothing and personal furnishings.....	1,900	2,037	2,099	2,177	2,258
Shelter.....	2,454	2,621	2,871	3,090	3,337
Household operation.....	2,272	2,509	2,585	2,697	2,872
Transportation.....	2,023	2,211	2,339	2,501	2,642
Personal and medical care and death expenses.....	1,166	1,316	1,430	1,538	1,661
Miscellaneous.....	2,157	2,290	2,350	2,351	2,535
Totals.....	17,389	18,833	19,964	21,035	22,261
Durable goods.....	2,245	2,431	2,431	2,500	2,658
Non-durable goods.....	9,065	9,736	10,367	10,853	11,400
Services.....	6,079	6,666	7,176	7,682	8,203

7.—Federal, Provincial and Municipal Government Revenue and Expenditure, 1955-59

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1126, and for 1954 in the 1959 edition, pp. 1092 and 1094.

(Millions of dollars)

Item	1955	1956	1957	1958*	1959
Revenue					
Direct Taxes: Persons—					
Income taxes.....	1,297	1,496	1,693	1,555	1,747
Succession duties.....	127	146	126	126	130
Miscellaneous taxes.....	75	90	98	113	211
Direct taxes: corporations.....	1,272	1,413	1,326	1,280	1,506
Withholding taxes.....	67	69	83	48	72
Indirect taxes.....	3,319	3,759	3,964	4,022	4,410
Investment Income—					
Interest.....	238	258	294	356	387
Profits of government business enterprises.....	515	576	571	587	605
Employer and employee contributions to social insurance and government pension funds.....	476	532	589	614	664
Totals, Revenue.....	7,386	8,339	8,744	8,701	9,732
Expenditure					
Purchase of goods and services.....	4,792	5,386	5,738	6,161	6,437
Transfer Payments—					
Interest.....	669	714	741	781	937
Other.....	1,737	1,766	2,079	2,657	2,785
Subsidies.....	82	123	116	139	190
Surplus or deficit (on transactions relating to the National Accounts).....	106	350	70	-1,037	-617
Totals, Expenditure.....	7,386	8,339	8,744	8,701	9,732

8.—Analysis of Corporation Profits, 1955-59

NOTE.—Comparable figures for the years 1939, 1944, 1946, 1950 and 1953 are given in the 1957-58 Year Book, p. 1127, and for 1954 in the 1959 edition, p. 1094.

(Millions of dollars)

Item	1955	1956	1957	1958*	1959
Corporation profits before taxes.....	2,570	2,908	2,547	2,483	2,836
Dividends paid to non-residents.....	395	437	480	447	490
Corporation profits including dividends paid to non-residents.....	2,965	3,345	3,027	2,930	3,326
Deduct: Corporation income tax liabilities.....	-1,272	-1,413	-1,326	-1,280	-1,506
Excess of tax liabilities over collections.....	163	40	-225	-53	69
Tax collections.....	1,109	1,873	1,551	1,533	1,437
Corporation profits after taxes.....	1,693	1,932	1,701	1,650	1,820
Deduct: Dividends paid to non-residents.....	-395	-437	-480	-447	-490
Corporation profits retained in Canada.....	1,298	1,495	1,221	1,203	1,330
Deduct: Dividends paid to Canadian persons.....	-307	-330	-315	-315	-333
Deduct: Charitable contributions from corporations.....	-29	-34	-36	-36	-40
Undistributed Corporation Profits.....	962	1,131	870	852	957

9.—Corporation Profits before Taxes (including Dividends Paid to Non-residents), by Industry, 1957-59

NOTE.—Comparable figures for the years 1954 and 1955 are given in the 1957-58 Year Book, p. 1127, and for 1956 in the 1959 edition, p. 1094.

(Millions of dollars)

Industry	1957	1958*	1959	Industry	1957	1958*	1959
Agriculture.....	4	4	4	Electric power, gas and water utilities.....	63	69	82
Forestry.....				Wholesale trade.....	267	241	274
Fishing and trapping.....				Retail trade.....	205	219	231
Mining, quarrying and oil wells.....	329	253	335	Finance, insurance and real estate.....	275	305	300
Manufacturing.....	1,474	1,388	1,633	Service.....	76	73	74
Construction.....	129	147	146	Adjustment.....	—	15	—24
Transportation.....	148	157	198				
Storage.....	10	10	12				
Communications.....	47	49	61	Totals.....	3,027	2,930	3,326

Section 2.—Canada's International Investment Position*

Canada is by far the world's largest importer of private long-term capital, and the tremendous capital formation which has been a feature of the 1950's has been associated with an unprecedented growth in the country's external liabilities. These investments have contributed to a rapid rate of growth in the Canadian economy, particularly in the exploitation of natural resources, and have added significantly to Canadian production, employment and income. At the same time they have added substantially to the burden of Canada's external debt and to the proportion of Canadian industry controlled by non-residents.

Canada's gross external liabilities amounted to \$24,100,000,000 at the end of 1959; non-resident-owned long-term investments in Canada had reached a book value of \$20,675,000,000, having doubled in the seven years since 1952, and the part of these investments in establishments controlled outside Canada totalled \$11,800,000,000. These foreign direct investments have been growing somewhat more rapidly than the total. Advances in other Canadian equities, although smaller, have also been substantial and there have been sharp increases in recent years in foreign holdings of Canadian bonds and debentures.

Investments of non-resident capital have been closely related to the high rate of growth in Canada and to the heavy demands placed on capital markets by this factor and by the financial needs of governments and municipalities. Large development projects have been initiated and financed by investors from other countries and the growth effects from this investment have, in turn, led to Canadian borrowing in capital markets outside of Canada. While capital inflows have been the principal source of the increased indebtedness abroad, another substantial contributor has been the earnings from non-resident-controlled branches and subsidiaries which were retained in Canada. New resource industries depending to a large extent on non-resident financing include all branches of the petroleum industry, iron ore and other mining, aluminum, nickel, pulp and paper, and chemical industries. In addition, secondary industry has also benefited from non-resident investment.

Canada's gross external assets totalled \$8,800,000,000 at the end of 1959 and government-owned assets made up a substantial part of that total. Canada's net balance of international indebtedness at the same date was estimated at \$15,300,000,000, almost half of which was incurred in the four years since 1955 and more than two-thirds in the seven years since 1952.

* Prepared in the Balance of Payments Section, International Trade Division, Dominion Bureau of Statistics. A more extended review appears in DBS report *Canada's International Investment Position, 1926 to 1954* (Catalogue No. 67-503) and more recent statistics in the annual report *The Canadian Balance of International Payments and International Investment Position* (Catalogue No. 67-201).

Foreign Investments in Canada.—Dependence upon external sources of capital for financing in earlier periods of heavy investment activity has been characteristic of Canadian development. During the exceptional growth period that occurred before World War I the rate of increase in non-resident investment was very high and dependency upon external sources of capital was greater than in later periods. Total non-resident investments in Canada increased from an estimated \$1,232,000,000 in 1900 to \$3,837,000,000 by 1914, mainly in the form of bonded debt for railway and other expansion guaranteed by the Canadian Government. This was the period when the principal external source of capital was London, and by 1914 British investments in Canada, estimated at \$2,778,000,000, were at about their highest level. By the same date, United States investments, although they had been increasing rapidly, had only about one-third of the value of British-owned investments.

During the first part of the inter-war period the United States became the principal source of external capital, and by 1926 the United States-owned portion of Canada's international debt exceeded that owned in the United Kingdom which had not increased since 1914. Growth in United States investments in Canada continued for some years but was interrupted in the 1930's when the total was reduced by repatriations of securities and other withdrawals of capital. Increases began again in the 1940's and by the end of World War II, United States investments of \$4,990,000,000 compared with British investments of \$1,750,000,000. The latter had been reduced by wartime repatriation measures and the proceeds were used in financing British expenditures in Canada. Following the War, up to 1948, some further declines occurred in British investments in Canada but since then they have increased.

United States investments have risen each year since the end of the Second World War, particularly since 1947 when the period of intense activity in the petroleum industry got under way following new discoveries. More than half the growth in United States investment in Canada has occurred since 1951. At \$15,725,000,000, United States investments in 1959 continued to represent more than three-quarters of all non-resident investments in Canada and also made up a similar ratio of the increase since 1951. The main rise occurred in direct investments in companies controlled in the United States, which are prominent in many branches of Canadian industry. By 1959 these had increased to two and one-half times their value in 1951. In the same period portfolio investments in Canada owned in the United States rose by more than two-thirds. A considerable part of this latter rise occurred in the period 1956-59 when large sales of new issues of securities were made in that country.

British investments in Canada totalled \$3,250,000,000 at the end of 1959. Although these investments then exceeded by some hundreds of millions of dollars the levels reached at the end of the First World War and again in the early 1930's, they accounted for only 16 p.c. of the total non-resident investments in Canada compared with 36 p.c. at the end of 1939 before most of the wartime repatriations. British investments in Canada had more than doubled from the low point in 1948; the increase had been particularly concentrated in direct investments which had more than tripled and which, at the end of 1959, represented a much larger portion of the total than in the prewar period. In absolute terms, this rise in total British investments in Canada is more than the rise in investments by all other overseas countries in the same period, although the rate of increase has been lower.

Investments of countries other than the United States and the United Kingdom reached a record total of \$1,700,000,000 at the end of 1959. Approaching four times the corresponding 1951 figure, this represented a much higher rate of increase than had occurred in either United States or British investments and large increases had taken place in portfolio holdings of securities as well as in direct investments. At 8 p.c. of the total, this group of countries, mostly in Western Europe, made up a larger portion of total investments than ever before. Nearly 90 p.c. of the direct investments, which totalled \$493,000,000 in 1957, also came from Western Europe; more than one-quarter was of Belgian origin with French, Swiss and German investments making up the next largest groups.

The degree of dependence upon non-resident capital for financing Canadian investment has been relatively much less in the postwar period than in the earlier periods of exceptional expansion, even though the rise in non-resident investments has been so great. Thus, from 1950 to 1955 the net use of foreign resources amounted to about one-fifth of net capital formation in Canada, and direct foreign financing amounted to about one-third. But from 1956 to 1959 when these ratios had increased considerably to more than one-third and two-fifths, respectively, they were still less than the corresponding ratios in the period 1929 to 1930 when inter-war investment activity was at its highest point. In that shorter period more than one-half of net capital formation was financed from outside of Canada, and in the period of heavy investment before World War I an even larger ratio of investment was financed by external capital. In considering these changes it should be noted that for a decade and a half, between 1934 and 1949, Canada was a net exporter of capital and that Canadian assets abroad have been rising over a long period.

It should also be noted that the above ratios relate to the place of non-resident investments in all spheres of development including those where Canadian sources of financing predominate such as in merchandising, agriculture, housing, public utilities, and other forms of social capital. Thus non-resident financing of manufacturing, petroleum and mining has been much higher than the over-all ratios indicate, and has provided the major portion of the capital investment in this field in the period since 1948. The most recent comprehensive calculation of the ratios of non-resident ownership in Canadian manufacturing, mining and petroleum is for the year 1957 and it should be noted that subsequent changes may have increased non-resident ownership even more. In that year the Canadian manufacturing industry was 50 p.c. owned by non-residents but capital subject to foreign control was 56 p.c. These proportions compared with 47 p.c. and 51 p.c., respectively, as recently as at the end of 1954. In the field of petroleum and natural gas, non-resident ownership and control each amounted to 64 p.c. and 76 p.c., respectively, at the end of 1957 whereas at the end of 1954 non-resident ownership and control had amounted to 60 p.c. and 69 p.c., respectively; in mining and smelting, non-resident ownership and control amounted to 56 p.c. and 61 p.c., respectively, compared with 56 p.c. and 51 p.c. in 1954. However, resident-owned Canadian capital continued to play a leading role in the financing of such areas of business as merchandising, railways and other public utilities. Hence non-resident ownership of business as a whole, including industry, petroleum, mining, merchandising and railways and utilities, rose only slightly from 32 p.c. in 1948 to 35 p.c. in 1957 (the last year for which the calculation has been made). But, in the same years, companies subject to non-resident control increased from 25 p.c. to 33 p.c. their share of the total even in this broad area of business, a trend also evident in many subdivisions of the manufacturing and extractive industries.

The petroleum and natural gas industry, including exploration and development, refining, merchandising, pipelines and other distribution facilities, has been the largest single recipient of capital inflows in the postwar period, accounting directly for far more than one-half of the inflow of United States capital for direct investment in Canada. By the end of 1957, investments in Canadian petroleum concerns controlled in the United States made up 71 p.c. of the total. Another 5 p.c. of the investment was controlled in overseas countries. Investments owned in the United States and overseas were 58 p.c. and 6 p.c., respectively, of the total.

Another basis of judging the place of foreign-controlled business in Canadian industry is provided by a special study of production and employment in the larger Canadian manufacturing establishments controlled in the United States. Such establishments having an investment of \$1,000,000 or more accounted for about 30 p.c. of Canadian manufacturing production in 1953 and 21 p.c. of employment in that field. These ratios in non-resident-controlled plants were considerably higher than in 1946—the previous year for which a study of this kind was made.

In some industries the proportions of production and employment in plants controlled in the United States were much higher than this. Automobiles, for example, are mainly produced in United States-controlled plants, but this is exceptional. Among other industries where well over one-half of the production is in United States-controlled firms are the smelting and refining of non-ferrous metals, petroleum refining, rubber products, and motor-vehicle parts. In several major industries like electrical apparatus and supplies and non-ferrous metal products the distribution of control between Canadian and United States-controlled companies is more evenly divided. In other industries the non-resident share is large although less than one-half the total. These include pulp and paper, other paper products, chemicals, medicinal and pharmaceutical products, sheet-metal products, and certain branches of the machinery industry.

There are, however, many industries where the largest part of production has been in Canadian-controlled plants. Prominent among these are such important branches of industry as primary iron and steel, and some other subdivisions of the iron and steel industry, textiles, clothing, and divisions of the foods and beverages industry, such as bakery products, beverages, and dairy products. But even in some of these industries changes in ownership and control have been occurring in recent years.

10.—Estimate of the Canadian Balance of International Indebtedness, as at Dec. 31, 1939-59

NOTE.—Totals are rounded and may not represent the sum of their components.

(Billions of dollars)

Item	1939	1945	1949	1955 ^c	1956 ^c	1957 ^c	1958	1959 ^p
Canadian Liabilities—								
Direct investments.....	2.3	2.7	3.6	7.7	8.9	10.1	10.9	11.8
Government and municipal bonds.....	1.7	1.7	1.8	1.9	2.1	2.3	2.6	3.1
Other portfolio investments.....	2.6	2.4	2.3	3.2	3.8	4.1	4.4	4.6
Miscellaneous investments.....	0.3	0.3	0.3	0.5	0.8	0.9	1.0	1.1
Totals, Non-resident Long-Term Investment in Canada.....	6.9	7.1	8.0	13.5	15.6	17.5	19.0	20.7
Equity of non-residents in Canadian assets abroad.....	0.2	0.2	0.3	0.7	0.8	0.8	0.9	1.0
Canadian dollar holdings of non-residents.....	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.5
Canadian short-term assets of IMF and IBRD.....	—	—	0.3	0.2	0.2	0.2	0.2	0.4
Gross Liabilities¹.....	7.4	7.6	8.9	14.8	17.0	18.9	20.6	22.6
United States ¹	4.5	5.4	6.4	11.1	12.6	14.2	15.5	16.9
United Kingdom ¹	2.6	1.8	1.8	2.5	2.8	3.1	3.2	3.4
Other countries, IMF and IBRD ¹	0.3	0.4	0.7	1.2	1.5	1.7	1.9	2.3
Short-term commercial payables ².....	..	0.4	0.4	0.5	0.7	1.0	1.2	1.5
Gross Liabilities.....	..	8.0	9.3	15.3	17.7	19.9	21.8	24.1
Canadian Assets—								
Direct investments.....	0.7	0.7	0.9	1.7	1.9	2.1	2.2	2.3
Portfolio investments.....	0.7	0.6	0.6	1.0	1.0	1.1	1.1	1.1
Government of Canada loans and advances.....	—	0.7	2.0	1.6	1.6	1.5	1.5	1.5
Government of Canada subscriptions to IMF and IBRD.....	—	—	0.4	0.4	0.4	0.4	0.4	0.6
Totals, Canadian Long-Term Investments Abroad.....	1.4	2.0	4.0	4.7	4.8	5.0	5.1	5.5
Government of Canada holdings of gold and foreign exchange.....	0.5	1.7	1.2	1.9	1.9	1.8	1.9	1.8
Bank balances and other short-term funds abroad.....	—	0.1	0.1	0.3	0.6	0.9	1.0	1.1
Gross Assets¹.....	1.9	3.8	5.2	7.0	7.3	7.7	7.9	8.3

For footnotes, see end of table, p. 1124.

10.—Estimate of the Canadian Balance of International Indebtedness, as at Dec. 31, 1939-59—concluded

Item	1939	1945	1949	1955 ^c	1956 ^c	1957 ^c	1958	1959 ^p
Canadian Assets—concluded								
Government of Canada holdings of gold and foreign exchange.....	0.5	1.7	1.2	1.9	1.9	1.8	1.9	1.8
United States ¹ , ³	0.9	0.9	1.1	2.2	2.6	3.0	3.1	3.3
United Kingdom ¹ , ³	0.1	0.7	1.6	1.4	1.4	1.4	1.4	1.4
Other countries, IMF and IBRD ¹	0.4	0.5	1.3	1.4	1.4	1.5	1.6	1.9
Short-term commercial receivables ².....	..	0.1	0.2	0.3	0.4	0.4	0.5	0.5
Gross Assets.....	..	4.0	5.5	7.4	7.7	8.1	8.4	8.8
Canadian Net International Indebtedness—Net Liabilities.....	5.5¹	4.0	3.8	7.9	10.0	11.8	13.4	15.3
Government of Canada holdings of gold and foreign exchange.....	-0.5	-1.7	-1.2	-1.9	-1.9	-1.8	-1.9	-1.8
United States ¹ , ³	3.6	4.6	5.3	8.8	10.0	11.2	12.4	13.6
United Kingdom ¹ , ³	2.5	1.1	0.2	1.1	1.4	1.7	1.9	2.0
Other countries, IMF and IBRD ¹	-0.1	-0.1	-0.6	-0.2	—	0.1	0.3	0.4
Short-term commercial indebtedness ².....	..	0.3	0.2	0.2	0.3	0.6	0.7	1.0

¹ Exclusive of short-term commercial indebtedness. ² Country distribution not available. ³ Exclusive of Government of Canada holdings of gold and foreign exchange.

11.—Foreign Capital Invested in Canada, by Type of Investment, as at Dec. 31, 1930-58

(Millions of dollars)

Type of Investment	1930	1945	1951	1955 ¹ , ^c	1956 ^c	1957 ^c	1958
Government Securities—							
Federal.....	682	726	1,013	529	502	501	564
Provincial.....	592	624	771	888	1,081	1,165	1,276
Municipal.....	432	312	319	451	551	658	781
Totals, Government Securities...	1,706	1,662	2,103	1,868	2,134	2,324	2,621
Public Utilities—							
Railways.....	2,244	1,599	1,436	1,364	1,425	1,396	1,413
Other (excluding pipelines and public enterprises).....	634	493	524	575	629	660	711
Totals, Public Utilities.....	2,878	2,092	1,960	1,939	2,054	2,056	2,124
Manufacturing (excluding petroleum refining).....	1,459	1,723	2,715	4,028	4,579	5,064	5,369
Petroleum and natural gas.....	150	157	693	1,854	2,275	2,853	3,192
Other mining and smelting.....	311	359	586	1,121	1,332	1,570	1,658
Merchandising.....	190	220	377	616	685	715	783
Financial institutions.....	543	525	595	1,231	1,493	1,781	1,945
Other enterprises.....	82	70	120	178	207	234	250
Miscellaneous investments.....	295	284	328	641	818	879	1,048
Totals, Investment.....	7,614	7,092	9,477	13,476	15,577	17,476	18,990
United States ²	4,060	4,990	7,259	10,278	11,802	13,276	14,441
United Kingdom ²	2,766	1,750	1,778	2,356	2,668	2,918	3,067
Other countries.....	188	352	440	842	1,107	1,282	1,482

¹ New series.

² Includes some investments held for residents of other countries.

**12.—Foreign Capital Invested in Canada by Type of Investment, classified by
Estimated Distribution of Ownership, as at Dec. 31, 1958**

NOTE.—Common and preferred stocks are at book values as shown in the balance sheets of the issuing companies; bonds and debentures are valued at par; and liabilities in foreign currencies are converted into Canadian dollars at par of exchange.

Type of Investment	Estimated Distribution of Ownership			Total Investments of Non-residents
	United States ¹	United Kingdom ¹	Other Countries	
	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Government Securities—				
Federal.....	396	65	103	564
Provincial.....	1,207	47	22	1,276
Municipal.....	741	33	7	781
Totals, Government Securities.....	2,344	145	132	2,621
Public Utilities—				
Railways.....	489	794	130	1,413
Other (excluding pipelines and public enterprises).....	523	115	73	711
Totals, Public Utilities.....	1,012	909	203	2,124
Manufacturing (excluding petroleum refining).....	4,242	913	214	5,369
Petroleum and natural gas.....	2,871	134	187	3,192
Other mining and smelting.....	1,386	170	102	1,658
Merchandising.....	549	196	38	783
Financial institutions.....	1,320	361	264	1,945
Other enterprises.....	196	41	13	250
Miscellaneous investments.....	521	198	329	1,048
Totals, Investments.....	14,441	3,067	1,482	18,990

¹ Includes some investments held for residents of other countries.

Canadian Assets Abroad.—While there has been a great growth in non-resident investment in Canada and in the balance of indebtedness to other countries, it will be noted that Canadian assets abroad, shown in Tables 13 and 14, have continued to rise in value each year. These now represent a larger proportion of liabilities abroad than was the case before World War II, but most of the increase since then has been in government-owned assets such as the official reserves and the loans by the Canadian Government to other governments which were extended during the War and early postwar years. In 1958 the government credits outstanding had a value of \$1,484,000,000 while official holdings of exchange amounted to \$1,879,000,000 in terms of Canadian dollars. Other official Canadian assets include Canada's subscriptions to the capital of the International Bank, the International Finance Corporation and the International Monetary Fund which, by March 1959, amounted to \$70,900,000, \$3,500,000 and \$293,300,000, respectively, a substantial part being offset by liabilities to these institutions.

The portion of the assets in private investments, particularly in the form of direct investments abroad by Canadian companies, is still small in relation to the corresponding non-resident stake in equities in Canada. Private long-term investments abroad by Canadians in 1958 were made up of direct investments of \$2,174,000,000 and portfolio investments of \$1,078,000,000. More than two-thirds of the privately owned investments were located in the United States. Direct investments in that country by Canadian businesses have grown rapidly and are found in many fields among which the beverage and farm implement industries are particularly noteworthy.

Private investments in overseas countries are widely distributed. About one-half of the total in 1956 were located in Commonwealth countries, with somewhat less in the United Kingdom than in the remainder of the Commonwealth. Most of the direct investments in the United Kingdom were in industry, while in other Commonwealth countries there were investments in mining and petroleum as well as in industry. In foreign overseas countries the largest part is in the countries of Latin America made up mainly of holdings in public utilities.

13.—Canadian Assets Abroad, 1939, 1948 and 1955-58

NOTE.—Excludes investments of insurance companies and banks, Canada's subscriptions to international financial institutions and short-term assets, other than official holdings of gold and foreign exchange. Holdings of stocks are at book values as shown in the books of issuing companies; holdings of bonds are shown at par values. Foreign currencies are converted into Canadian dollars at current market rates. The series for portfolio investment was reconstructed in 1952 and is not strictly comparable with preceding years.

(Millions of dollars)

Assets	1939	1948	1955 ^a	1956 ^a	1957	1958
Direct investments in businesses outside Canada.....	671	788	1,751	1,904	2,084	2,174
Portfolio holdings of foreign securities.....	719	605	991	1,006	1,054	1,078
Government credits.....	31	1,878	1,635	1,565	1,515	1,484
Official balances abroad and gold.....	459	1,006	1,908	1,866	1,807	1,879
Totals.....	1,880	4,277	6,285	6,341	6,460	6,615

14.—Canadian Assets Abroad by Location of Investment, as at Dec. 31, 1958

NOTE.—See headnote to Table 13.

Location of Investment	Direct Investments	Portfolio Investment		Government Credits	Official Holdings of Exchange	Total Investments
		Stocks	Bonds	Bonds	Total	
	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000	\$'000,000
United States.....	1,465	631	111	—	830	3,037
United Kingdom.....	200	27	14	1,080	9	1,330
Other Commonwealth countries.....	266	8	21	34	—	329
Other foreign countries.....	243	162	104	370	—	879
Official gold holdings.....	—	—	—	—	1,040	1,040
Totals.....	2,174	828	250	1,484	1,879	6,615

CHAPTER XXIV.—CURRENCY AND BANKING; MISCELLANEOUS COMMERCIAL FINANCE

CONSPECTUS

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NOTE.—The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

PART I.—CURRENCY AND BANKING*

A historical sketch of currency and banking in Canada appears in the 1938 Year Book, pp. 900-905.

Section 1.—The Bank of Canada

The Bank of Canada is Canada's central bank. It was incorporated under the Bank of Canada Act in 1934 and commenced operations on Mar. 11, 1935. The Act of Parliament which established the central bank charged it with the responsibility for regulating "credit and currency in the best interests of the economic life of the nation", and conferred on it certain specific powers for discharging this responsibility. Through the exercise of these powers the Bank of Canada broadly determines the combined total of the basic forms of Canadian money held by the community—currency outside banks plus deposit balances in chartered bank accounts.

By virtue of the provisions of the Bank of Canada Act, which enable the central bank to increase or decrease the total amount of cash reserves available to the chartered banks as a group, the Bank of Canada is able to determine broadly the over-all level of the total assets and deposit liabilities of the group, and hence of the combined total of currency and bank deposits. The Bank Act requires that each chartered bank maintain a minimum amount of cash reserves in the form of deposits at the Bank of Canada and holdings of Bank of Canada notes. This minimum requirement is 8 p.c. of the bank's total Canadian dollar deposit liabilities on a monthly average basis. The ability of the chartered banks as a group to expand their total assets and deposit liabilities therefore depends on the level of total cash reserves. An increase in cash reserves will encourage the banks to expand their total assets (which consist chiefly of loans and marketable securities) with a concomitant increase in deposit liabilities; a decrease in cash reserves will bring about a decline in their total assets and deposit liabilities as they seek to restore their cash reserve ratios.

* Except where otherwise indicated, this material has been revised by the Research Department of the Bank of Canada.

The chief method by which the Bank of Canada can affect the level of cash reserves of the chartered banks, and through them the total of chartered bank deposits, is by purchases and sales of government securities. Payment by the central bank for the securities it purchases in the market adds to the cash reserves of the chartered banks as a group and puts them in a position to expand their assets and deposit liabilities. Conversely, payment to the central bank for securities it sells causes a reduction in reserves of the chartered banks and makes it necessary for them to reduce their assets and deposit liabilities.

The influence that the Bank of Canada has on credit conditions and hence on economic behaviour stems from its ability to determine broadly the level of total holdings of currency and chartered bank deposits. The trend of total holdings of these forms of money can have an influence on liquidity generally, including effects on interest rates and bond prices and the availability of credit, and on expectations regarding future financial and economic trends, all of which have some effect on decisions to spend or to save. However, many factors other than changes in the money supply also have important influences on financial and economic developments, such as: the state of economic conditions and prospects outside Canada; the competitive strength of Canadian business enterprises both at home and abroad; the character of the investment decisions and price and wage policies in domestic industries; the skills and degree of mobility of labour; and the nature of public policies at all levels of government with regard to such matters as expenditure, taxation, subsidies and the regulation of industry.

In forming its judgments in the light of changing circumstances as to whether its operations should be such as to facilitate an increase or induce a decrease in the supply of money, or to hold it more or less constant, the Bank of Canada is bound by criteria laid down by Act of Parliament in the preamble to the Bank of Canada Act of 1934. In addition to the broad directive to the Bank "to regulate credit and currency in the best interests of the economic life of the nation", and "generally to promote the economic and financial welfare of the Dominion", it is also prescribed that the Bank should endeavour "to mitigate by its influence fluctuations in the general level of production, trade, prices and employment as far as may be possible within the scope of monetary action". Its operations must be based, not on any simple mechanical formula, but rather on continuous observation and appraisal of the constantly changing state of the economy as reflected in the complex pattern of economic and financial developments.

While the Bank of Canada has the power to determine the combined total of currency and chartered bank deposits, it has no means of determining how much of this total is held in the form of currency and how much in the form of chartered bank deposits. That depends on the wishes of the public, since deposits can be converted freely into notes and coin and back again. Nor does the Bank have any direct control over the growth of other forms of money or of close substitutes for money as a store of wealth in liquid form, of which there are many varieties in Canada—mainly deposit balances in savings institutions other than chartered banks and short-term securities issued by governments and corporations.

The cash reserve system in Canada, which is similar to that in a number of other countries, while placing the central bank in a position where it can determine within broad limits the total amount of chartered bank assets and deposits, leaves the allocation of bank credit and other forms of credit to the private sector of the economy. Each chartered bank can attempt to gain as large a share as possible of the total cash reserves by competing for deposits. Each bank determines how its assets will be distributed, for example, between various kinds of securities and loans to various types of borrowers. The Bank of Canada has no power to direct banks or other lenders to make funds available to certain groups or in certain regions on the same terms or on different terms than to other groups or in other regions. The influence of the central bank—based in essence on its power to expand or contract chartered bank cash reserves through its market purchases or sales of securities—is both indirect and impersonal and is brought to bear on financial conditions generally through the chartered banks and the numerous inter-connected channels of the capital market.

The powers of the Bank are set forth in the Bank of Canada Act, 1934 (RSC 1952, c. 13), revisions in which were made in 1936, 1938 and 1954. Some of these powers are outlined below.

The Bank may buy and sell securities issued or guaranteed by Canada or any province, short-term securities issued by the United Kingdom, treasury bills or other obligations of the United States, and certain classes of short-term commercial paper. The Bank is authorized by the Industrial Development Bank Act to purchase bonds and debentures issued by the Industrial Development Bank. The Bank may buy and sell gold, silver, nickel and bronze coin, and gold and silver bullion, and may also deal in foreign exchange. The Bank may accept deposits that do not bear interest from the Government of Canada, the government of any province, any chartered bank or any bank to which the Quebec Savings Bank Act applies. The Bank does not accept deposits from individuals and does not compete with the chartered banks in commercial banking fields.

The Bank acts as the fiscal agent for the Government of Canada in the payment of interest and principal and generally in respect of the management of the public debt of Canada.

The Bank has the sole right to issue paper money for circulation in Canada. Details regarding the note issue are given on p. 1132.

The Bank of Canada may vary the minimum cash reserve requirement of the chartered banks between 8 p.c. and 12 p.c. of their Canadian dollar deposit liabilities, provided that the chartered banks are given a minimum notice period of one month before each increase becomes effective and that any increase is not more than 1 p.c. during any one month. When this legislation became effective on July 1, 1954 the requirement was 8 p.c. and it has since remained at that level. (Prior to July 1, 1954, each chartered bank was required to maintain at all times cash reserves equal to not less than 5 p.c. of its Canadian dollar deposit liabilities; in practice the chartered banks as a group normally worked to a ratio of about 10 p.c.)

The Bank may make loans or advances for periods not exceeding six months to chartered banks, or to banks to which the Quebec Savings Bank Act applies, on the pledge or hypothecation of certain classes of securities. Loans or advances on the pledge or hypothecation of readily marketable securities issued or guaranteed by Canada or any province may be made to the Government of Canada or the government of any province for periods not exceeding six months. Other loans may be made to the Government of Canada or the government of any province in amounts not exceeding a fixed proportion of such government's revenue; such loans must be repaid before the end of the first quarter after the end of the fiscal year of the borrower.

The Bank of Canada is required to make public at all times the minimum rate at which it is prepared to make loans or advances; this rate is known as the Bank Rate. Since Nov. 1, 1956 the Bank Rate has been established weekly at a fixed margin of $\frac{1}{4}$ of 1 p.c. above the latest weekly average tender rate for 91-day treasury bills.

Sect. 23 of the Bank of Canada Act provides that the Bank shall maintain a reserve of gold equal to not less than 25 p.c. of its outstanding notes and deposit liabilities. This requirement was suspended in 1940 when, under the terms of the Exchange Fund Order, the Bank's gold holdings were transferred to the Exchange Fund Account to form part of Canada's official gold and United States dollar reserves. The Currency, Mint and Exchange Fund Act passed in 1952 provides that, notwithstanding Sect. 23 of the Bank of Canada Act, the Bank of Canada is not required to maintain a minimum or fixed ratio of gold or foreign exchange to its liabilities unless the Governor in Council otherwise prescribes.

The Bank is under the management of a Board of Directors composed of a Governor, a Deputy Governor and twelve Directors. The Governor and Deputy Governor are appointed for terms of seven years each by the Directors, with the approval of the Governor General in Council. The Directors are appointed by the Minister of Finance, with the approval of the Governor General in Council, for terms of three years each. The Deputy Minister of Finance is a member of the Board but does not have the right to vote. There is an Executive Committee of the Board composed of the Governor, the Deputy Governor, one Director and the Deputy Minister of Finance (who is without a vote) which has the same powers as the Board except that its decisions must be submitted to the Board at its next meeting. In addition to the Deputy Governor who is a member of the Board, there may be one or more Deputy Governors appointed by the Board of Directors to perform such duties as are assigned by the Board.

The Governor is the chief executive officer of the Bank and Chairman of the Board of Directors. The Governor has the power to veto any action or decision of the Board of Directors or of the Executive Committee but such veto is subject to confirmation or disallowance by the Governor General in Council. In the absence of the Governor, the Deputy Governor, who is a member of the Board, exercises all the powers and functions of the Governor.

The capital of the Bank is \$5,000,000 and is held entirely by the Minister of Finance. The Bank of Canada Act as amended in 1954 provides that each year 20 p.c. of the Bank's annual profits (after provision for depreciation in assets, pension funds and such matters) shall be allocated to the Rest Fund until the Rest Fund reaches an amount five times the paid-up capital of the Bank and the remainder shall be paid to the Receiver General and placed to the credit of the Consolidated Revenue Fund. At the end of 1957, the Rest Fund of the Bank reached its maximum of \$25,000,000 so that, since that date, the whole of the Bank's profits have been transferred to the Receiver General.

The head office of the Bank is at Ottawa. It has agencies at Halifax, Saint John, Montreal, Ottawa, Toronto, Winnipeg, Regina, Calgary and Vancouver and is represented in St. John's and Charlottetown. The agencies are chiefly concerned with the functions of the Bank as fiscal agent for the Government of Canada and with the issue and redemption of currency. The Industrial Development Bank, which is described on the following page, is a subsidiary of the Bank of Canada.

The Bank of Canada Act requires that statements of the assets and liabilities of the Bank on each Wednesday and the last day of each month be published in the *Canada Gazette*. A summary of the statement as at Dec. 31, 1957-59, appears in Table 1.

1.—Assets and Liabilities of the Bank of Canada, as at Dec. 31, 1957-59

Item	1957	1958	1959
	\$'000,000	\$'000,000	\$'000,000
Assets			
Foreign exchange.....	63.6	55.3	41.2
Advances to chartered and savings banks.....	—	2.0	—
Investments—			
Treasury bills of Canada.....	467.1	35.9	305.9
Other securities issued or guaranteed by Canada maturing within 2 years.....	779.2	245.2	514.5
Other securities issued or guaranteed by Canada not maturing within 2 years.....	1,181.2	2,340.6	1,800.2
Bonds and debentures issued by Industrial Development Bank.....	36.2	52.9	58.6
Other securities.....	16.7	38.5	18.5
Industrial Development Bank capital stock.....	25.0	25.0	25.0
Bank premises.....	8.6	9.8	10.9
All other assets.....	81.1	139.1	193.3
Totals, Assets.....	2,658.7	2,944.4	2,968.1

1.—Assets and Liabilities of the Bank of Canada, as at Dec. 31, 1957-59—concluded

Item	1957	1958	1959
	\$'000,000	\$'000,000	\$'000,000
Liabilities			
Capital paid up.....	5.0	5.0	5.0
Reserve Fund.....	25.0	25.0	25.0
Notes in Circulation—			
Held by chartered banks.....	348.6	338.2	315.7
All other.....	1,555.1	1,659.9	1,704.8
Deposits—			
Government of Canada.....	35.4	34.9	45.6
Chartered banks.....	517.6	662.7	637.0
Other.....	31.2	25.0	34.8
Foreign currency liabilities.....	70.0	83.9	50.0
All other liabilities.....	70.8	109.9	150.2
Totals, Liabilities.....	2,658.7	2,944.4	2,968.1

The Industrial Development Bank.—The Industrial Development Bank, a subsidiary of the Bank of Canada, was incorporated by Act of Parliament during 1944 and its banking operations commenced on Nov. 1, 1944. Its functions are described in the preamble to the Act as follows:—

“To promote the economic welfare of Canada by increasing the effectiveness of monetary action through ensuring the availability of credit to industrial enterprises which may reasonably be expected to prove successful if a high level of national income and employment is maintained, by supplementing the activities of other lenders and by providing capital assistance to industry with particular consideration to the financing problems of small enterprises.”

The President of the Industrial Development Bank is the Governor of the Bank of Canada and the Directors are the Directors of the Bank of Canada. The \$25,000,000 capital stock of the Bank (completely paid up) was subscribed by the Bank of Canada. The Industrial Development Bank may also raise funds by the issue of bonds and debentures provided that its total direct liabilities and contingent liabilities in the form of guarantees and underwriting agreements do not exceed three times the aggregate of the Bank's paid-up capital and Reserve Fund.

The lending powers of the Bank may be extended only to industrial enterprises in Canada with respect to which it is empowered to:—

- (1) lend money or guarantee loans;
- (2) enter into underwriting agreements with regard to any issue of stock, bonds or debentures;
- (3) acquire stock, bonds or debentures from the issuing corporation or any person with whom the Bank has entered into an underwriting agreement.

Industrial enterprises as defined by the Act (amended in 1956) include: (1) manufacturing, processing, assembling, installing, overhauling, reconditioning, altering, repairing, cleaning, packaging, transporting or warehousing of goods; (2) logging, operating a mine or quarry, drilling, construction, engineering, technical surveys or scientific research; (3) generating or distributing electricity or operating a commercial air service, or the transportation of persons, or (4) supplying premises, machinery or equipment for any business mentioned in (1), (2) or (3) under a lease, contract or other arrangement whereby title to the premises, machinery or equipment is retained by the supplier.

The Bank may accept any form of collateral security against its advances, including real property. It is intended to supplement the activities of other lending agencies, not to compete with them, and the Act of incorporation requires that it should extend credit only when the Board of Directors is of the opinion that similar credit would not be available elsewhere on reasonable terms and conditions. Its lending takes the form of fixed-term capital loans rather than current operating loans. The Bank is specifically prohibited from engaging in the business of deposit banking. It has offices in the following cities: Halifax, Saint John, Quebec, Montreal, Ottawa, Toronto, London, Sudbury, Winnipeg, Regina, Calgary and Vancouver.

2.—Assets and Liabilities of the Industrial Development Bank, as at Sept. 30, 1956-59

Item	1956	1957	1958	1959
	\$'000,000	\$'000,000	\$'000,000	\$'000,000
Assets—				
Loans outstanding ¹	52.2	71.9	88.8	96.9
Other assets.....	0.9	1.9	1.6	1.8
Totals, Assets.....	53.1	73.8	90.4	98.7
Liabilities—				
Capital and reserves.....	34.6	36.1	37.9	39.4
Bonds and debentures outstanding.....	17.7	35.5	51.0	57.7
Other liabilities.....	0.8	2.2	1.5	1.6
Totals, Liabilities.....	53.1	73.8	90.4	98.7
Loan Transactions—				
Disbursements.....	20.1	32.6	31.2	29.3
Repayments.....	12.0	12.9	14.2	20.5
Loans outstanding plus undistributed authorizations.....	76.9	88.3	104.3	109.3
	No.	No.	No.	No.
Customers on Books.....	820	1,022	1,322	1,609

¹ Includes investments; the change in loans outstanding does not equal the difference between disbursements and repayments because of year-end accounting adjustments.

Section 2.—Currency

Subsection 1.—Notes and Coinage

Note Circulation.—The development by which bank notes became the chief circulating medium in Canada prior to 1935 is described in the 1938 Year Book, pp. 900-905. Those features of the development which then became permanent are outlined in the 1941 Year Book, pp. 809-810.

When the Bank of Canada commenced operations in 1935 it assumed liability for Dominion notes outstanding. These were replaced in public circulation and partly replaced in cash reserves by the Bank's legal tender notes in denominations of \$1, \$2, \$5, \$10, \$20, \$50 and \$100. Deposits of chartered banks at the Bank of Canada completed the replacement of the old Dominion notes of \$1,000 to \$50,000 denomination that had previously been used as cash reserves.

The chartered banks were required under the Bank Act of 1934 to reduce gradually the issue of their own bank notes during the years 1935-45 to an amount not in excess of 25 p.c. of their paid-up capital on Mar. 11, 1935. Bank of Canada notes thus replaced chartered bank notes as the issue of the latter was reduced. Further restrictions introduced by the 1944 revision of the Bank Act cancelled the right of chartered banks to issue or re-issue notes after Jan. 1, 1945, and in January 1950 the chartered banks' liability for such of their notes issued for circulation in Canada as then remained outstanding was transferred to the Bank of Canada in return for payment of a like sum to the Bank of Canada.

3.—Bank of Canada Note Liabilities and Other Notes in Circulation, as at Dec. 31, 1950 and 1957-59

Denomination	1950	1957	1958	1959
	\$'000	\$'000	\$'000	\$'000
Bank of Canada Notes—				
\$1.....	50,273	72,589	75,873	78,402
\$2.....	37,279	51,952	53,597	55,076
\$5.....	111,731	139,839	143,010	144,702
\$10.....	429,886	528,575	533,078	521,309
\$20.....	346,060	582,163	627,814	647,276
\$25.....	47	46	46	46
\$50.....	108,735	134,803	143,606	145,461
\$100.....	254,457	365,479	391,629	395,383
\$500.....	160	51	49	46
\$1,000.....	11,489	14,661	15,928	19,549
Totals.....	1,350,117	1,890,159	1,984,630	2,007,250
Chartered banks' notes ¹	12,487	8,799	8,655	8,519
Dominion of Canada notes ¹	4,702	4,648	4,645	4,641
Provincial notes ¹	28	28	28	28
Defunct banks' notes ¹	88	88	88	88
Totals, Bank of Canada Note Liabilities.....	1,367,422	1,903,721	1,998,046	2,020,525
Held by—				
Chartered banks.....	231,306	348,606	338,176	315,703
Others.....	1,136,116	1,555,115	1,659,870	1,704,822

¹ Note issues in the process of being retired, the liability for which has been taken over by the Bank of Canada from the original issuers.

4.—Note Circulation in the Hands of the Public, as at Dec. 31, 1950-59

As at Dec. 31—	Bank of Canada Notes ¹	Per Capita ²	As at Dec. 31—	Bank of Canada Notes ¹	Per Capita ²
	\$	\$		\$	\$
1950.....	1,136,115,742	82.86	1955.....	1,449,045,166	92.88
1951.....	1,191,091,182	85.02	1956.....	1,497,765,781	93.14
1952.....	1,288,688,392	89.31	1957.....	1,555,115,143	93.74
1953.....	1,335,332,954	90.34	1958.....	1,659,870,299	97.36
1954.....	1,361,874,433	89.63	1959.....	1,704,822,198	97.74

¹ Total issue less notes held by chartered banks.

² Based on estimates of population as given at p. 196.

Coinage.*—Under the Currency, Mint and Exchange Fund Act (RSC 1952, c. 315), gold coins may be issued in denominations of twenty dollars, ten dollars and five dollars (nine-tenths fine or millesimal fineness, 900). Subsidiary coins include: silver coins in denominations of one dollar, 50 cents, 25 cents, 10 cents (eight-tenths fine or millesimal fineness, 800); pure nickel five-cent coins; and bronze (copper, tin and zinc) one-cent coins. Provision is made for the temporary alteration of composition in event of a shortage of prescribed metals. A tender of payment of money in coins is a legal tender in the case of gold coins for the payment of any amount; in the case of silver coins for the payment of an amount up to \$10; nickel coins for payment up to \$5; and bronze coins up to 25 cents.

* Revised by the Master of the Royal Canadian Mint, Ottawa.

5.—Canadian Coin in Circulation, as at Dec. 31, 1950-59

NOTE.—The figures shown are of net issues of coin. Figures from 1901 are given in the corresponding table of previous Year Books beginning with the 1927-28 edition.

As at Dec. 31—	Silver	Nickel	Tombac ¹	Steel	Bronze	Total	Per Capita ²
	\$	\$	\$	\$	\$	\$	\$
1950.....	73,473,724	7,393,138	621,440	1,519,419	10,012,143	93,019,864	6.78
1951.....	78,638,143	7,815,103	599,655	1,701,849	10,794,169	99,548,919	7.11
1952.....	83,463,939	7,814,398	584,882	2,278,329	11,476,591	105,618,139	7.32
1953.....	89,550,236	7,813,081	570,847	3,109,691	12,130,181	113,174,036	7.66
1954.....	91,350,637	7,810,723	560,577	3,458,758	12,392,389	115,573,084	7.60
1955.....	95,574,457	8,076,800	555,912	3,457,712	12,956,807	120,621,688	7.62
1956.....	100,922,477	8,545,507	552,868	3,458,782	13,742,282	127,219,916	7.87
1957.....	107,116,450	8,910,869	550,743	3,455,886	14,745,243	134,779,191	7.98
1958.....	115,120,076	9,289,481	549,630	3,455,062	15,322,156	143,736,405	8.32
1959.....	123,344,059	9,865,012	549,237	3,454,209	16,150,222	153,362,739	8.68

¹ Tombac, a copper-zinc alloy, was used to conserve nickel for war purposes; no coins of this metal have been issued since 1944.

² Based on estimates of population as given at p. 196.

The Royal Canadian Mint.*—The Mint at Ottawa was established as a branch of the Royal Mint under the (Imperial) Coinage Act 1870 and opened on Jan. 2, 1908. In 1931 (RSC 1952, c. 240) it was constituted a branch of the Canadian Department of Finance and has since operated as the Royal Canadian Mint. From 1858 the British North American provinces, and later Canada, obtained their coins from the Royal Mint at London or from The Mint, Birmingham, England. Before that date, coins were mainly British, United States and Spanish. In its earlier years the operations of the Mint in Canada were confined to the production of gold, silver and bronze coins for domestic circulation and of British sovereigns and small coins struck under contract for Newfoundland and Jamaica.

Before 1914 only small quantities of gold bullion were refined but during World War I the Mint came to the assistance of the British Government by establishing a refinery in which nearly 20,000,000 oz. t. of South African gold were treated on Bank of England account. The subsequent development of the gold mining industry in Canada resulted in gold refining becoming one of the principal activities of the Mint. Fine gold produced from the rough bullion shipments received from the mines is purchased by the Mint and later delivered to the Bank of Canada for account of the Minister of Finance in bars of approximately 400 oz. t. each or, for those mines authorized to sell gold in the open market, the bullion is shipped to various domestic and foreign processors. The fine silver extracted from the rough gold is generally used for coinage purposes.

* Revised by the Master of the Royal Canadian Mint, Ottawa.

6.—Receipts of Gold Bullion at the Royal Canadian Mint and Bullion and Coinage Issued, 1950-59

NOTE.—Figures from 1926 are given in the corresponding table of previous Year Books beginning with the 1946 edition.

Year	Gold Received	Gold Bullion Issued	Silver Coin Issued	Nickel Coin Issued	Steel Coin Issued	Bronze Coin Issued
	oz. t.	oz. t.	\$	\$	\$	\$
1950.....	4,422,968	4,347,961	5,641,805	640,510	—	607,003
1951.....	4,169,480	4,167,485	5,213,677	423,003	182,829	783,329
1952.....	3,953,158	4,031,063	4,869,552	507	576,965	683,820
1953.....	3,684,074	3,626,497	6,138,686	234	831,915	655,130
1954.....	3,820,431	3,998,836	1,864,968	27	350,229	263,897
1955.....	3,947,637	3,952,764	4,269,157	267,801	—	566,863
1956.....	3,801,789	3,774,599	5,389,464	469,993	—	786,855
1957.....	3,896,084	3,776,711	6,236,429	366,493	—	1,004,221
1958.....	3,958,459	4,088,706	8,044,753	379,616	—	578,274
1959.....	3,908,640	3,836,680	8,273,563	576,680	—	829,116

Subsection 2.—Canadian Dollar Currency and Bank Deposits

Bank of Canada statistics concerning holdings of currency and bank deposits are given in Table 7.

7.—Canadian Dollar Currency and Chartered Bank Deposits, as at Dec. 31, 1950-59

(Millions of dollars)

As at Dec. 31—	Currency Outside Banks			Chartered Bank Deposits				Total Currency and Chartered Bank Deposits ¹		
	Notes	Coin	Total	Personal Savings Deposits ²	Govern- ment of Canada Deposits	Other Deposits ^{1,2}	Total ¹	Total Including Govern- ment Deposits	Held by General Public	
									Including Personal Savings Deposits	Excluding Personal Savings Deposits ²
1950.....	1,136	78	1,214	4,176	257	3,116	7,549	8,763	8,506	4,330
1951.....	1,191	84	1,275	4,296	88	3,100	7,484	8,759	8,671	4,375
1952.....	1,289	88	1,377	4,600	49	3,281	7,930	9,307	9,258	4,658
1953.....	1,335	94	1,430	4,756	473	3,130	8,359	9,789	9,316	4,560
1954.....	1,362	96	1,458	5,218	176	3,462	8,856	10,314	10,137	4,920
1955.....	1,449	101	1,550	5,633	517	3,697	9,847	11,397	10,880	5,248
1956.....	1,498	108	1,605	6,007	246	3,580	9,833	11,438	11,192	5,185
1957.....	1,555	112	1,667	6,108 ²	423	3,725 ²	10,256	11,923	11,500	5,392 ²
1958.....	1,660	121	1,781	6,844	319	4,303	11,466	13,247	12,927	6,084
1959.....	1,705	128	1,832	6,900	404	4,057	11,360	13,193	12,789	5,890

¹ Less total float, i.e., cheques and other items in transit. ² The deposit balances of religious, educational and welfare institutions and personal accounts used mainly for business purposes were reclassified from "personal savings deposits" to "other notes deposits" as at Sept. 30, 1957, in the returns of the banks to the Department of Finance; from that date the figures are thus not comparable with those for previous years. The amount of deposits reclassified was approximately \$140,000,000.

Section 3.—Commercial Banking

As one of the chief functions of the early banks in Canada was to issue notes to provide a convenient currency or circulating medium, it has been expedient to cover both currency and banking in one historical sketch, which is given in the 1938 Year Book, pp. 900-905. A list of the banks at Confederation appears in the 1940 Year Book, p. 897, and bank absorptions since 1867 are given in the 1941 edition, pp. 812-813. A table in the 1937 Year Book, pp. 894-895, shows the insolvencies since Confederation; the last insolvency occurred in 1923.

Subsection 1.—Chartered Banks

Canadian commercial banks are chartered or licensed by the Government of Canada and operate under one federal statute—the Bank Act—which is revised every ten years and brought into line with changing economic conditions. In addition to conducting a commercial banking business the chartered banks hold most of the public's savings deposits. The last revision of the Bank Act took place in 1954.

Branches of Chartered Banks.—Although there are fewer chartered banks now than at the beginning of the century, there has been a great increase in the number of branch banking offices. As a result of amalgamations, the number of banks declined from 34 in 1901 to 10 in 1931, and remained at that figure until the incorporation of a new bank—

the Mercantile Bank of Canada—in 1953 brought the total to 11. Since then the amalgamation in 1955 of the Bank of Toronto and the Dominion Bank as the Toronto-Dominion Bank, and the amalgamation of Barclays Bank (Canada) with the Imperial Bank of Canada in 1956 has reduced this number to nine. The number of branches of chartered banks in each province periodically from 1868 is given in Table 8.

8.—Branches of Chartered Banks, by Province, as at Dec. 31 for Certain Years 1868-1959

NOTE.—Figures for 1920 and subsequent years include sub-agencies in Canada receiving deposits for the banks employing them; there were 747 such sub-agencies at Dec. 31, 1959.

Province or Territory	1868	1902	1905	1920	1926	1930	1940	1943	1946	1950	1957	1958	1959
	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.	No.
Newfoundland.....	—	—	—	—	—	—	—	—	—	39	59	65	69
Prince Edward Island....	—	9	10	41	28	28	25	23	23	23	24	24	27
Nova Scotia.....	5	89	101	169	134	138	134	126	127	144	159	164	169
New Brunswick.....	4	35	49	121	101	102	97	93	96	100	109	110	112
Quebec.....	12	137	196	1,150	1,072	1,183	1,083	1,041	1,067	1,164	1,337	1,363	1,405
Ontario.....	100	349	549	1,586	1,326	1,409	1,208	1,092	1,117	1,257	1,584	1,640	1,711
Manitoba.....	—	52	95	349	224	239	162	148	151	165	206	216	226
Saskatchewan.....	—	—	—	591	427	447	233	213	226	238	268	275	283
Alberta.....	—	30	87	424	269	304	172	163	190	246	337	352	372
British Columbia.....	2	46	55	242	186	229	192	180	216	294	436	455	492
Yukon and N.W.T.....	—	—	3	3	3	4	5	5	6	9	10	13	18
Canada.....	123	747	1,145	4,676	3,770	4,083	3,311	3,084	3,219	3,679	4,529	4,677	4,879

9.—Branches of Individual Canadian Chartered Banks, by Province, as at Dec. 31, 1959

NOTE.—This table includes 747 sub-agencies in Canada for receiving deposits.

Bank	Nfld.	P.E.I.	N.S.	N.B.	Que.	Ont.
	No.	No.	No.	No.	No.	No.
Bank of Montreal.....	18	2	24	17	155	286
Bank of Nova Scotia.....	28	8	48	38	45	219
Banque Canadienne Nationale.....	—	—	—	—	571	19
Banque Provinciale du Canada.....	—	3	—	18	314	23
Canadian Bank of Commerce.....	6	8	24	11	117	355
Imperial Bank of Canada.....	1	—	1	1	23	184
Mercantile Bank of Canada.....	—	—	—	—	1	1
Royal Bank of Canada.....	16	5	69	22	124	312
Toronto-Dominion Bank.....	—	1	3	5	55	312
Totals.....	69	27	169	112	1,405	1,711
	Man.	Sask.	Alta.	B.C.	Yukon and N.W.T.	Total
	No.	No.	No.	No.	No.	No.
Bank of Montreal.....	42	49	89	116	3	801
Bank of Nova Scotia.....	17	30	43	63	—	539
Banque Canadienne Nationale.....	4	—	—	—	4	598
Banque Provinciale du Canada.....	—	—	—	—	—	358
Canadian Bank of Commerce.....	48	56	77	133	5	840
Imperial Bank of Canada.....	12	28	46	31	1	328
Mercantile Bank of Canada.....	—	—	—	1	—	3
Royal Bank of Canada.....	67	82	74	100	4	875
Toronto-Dominion Bank.....	36	38	43	48	—	541
Totals.....	226	283	372	492	17	4,883

10.—Branches of Individual Canadian Chartered Banks Outside Canada, as at Dec. 31, 1957-59

NOTE.—This table does not include sub-agencies operating outside Canada, of which there were 17 in 1959.

Bank and Location	1957	1958	1959	Bank and Location	1957	1958	1959
	No.	No.	No.		No.	No.	No.
Bank of Montreal—				Royal Bank of Canada—			
United Kingdom.....	2	2	2	United Kingdom.....	2	2	2
United States.....	2	2	2	British West Indies.....	21	15	20
France.....	3	3	3	United States.....	1	1	1
Germany.....	4	4	4	Cuba.....	20	23	24
Bank of Nova Scotia—				Puerto Rico.....	4	5	5
United Kingdom.....	2	2	2	Central and South America.....	26	25	25
British West Indies.....	24	20	21	Haiti.....	1	1	1
Dominican Republic.....	2	2	2	Dominican Republic.....	6	6	7
United States.....	1	1	1	France.....	1	1	1
Cuba.....	8	8	8	Toronto-Dominion—			
Puerto Rico.....	3	3	3	United Kingdom.....	1	1	2
Trinidad.....	1	1	2	United States.....	1	1	1
Canadian Bank of Commerce—				Banque Canadienne Nationale—			
United Kingdom.....	2	2	2	France.....	1	1	1
British West Indies.....	5	5	9				
United States.....	5	5	5				
				Totals.....	149	142	156

Financial Statistics of the Chartered Banks.—The classification of chartered bank assets and liabilities was revised by the Bank of Canada Act 1954, so that some of the statistics given in the following tables are not comparable with those appearing in earlier editions of the Year Book. Figures shown in Table 11 prior to July 1954 have been adjusted to comply with the new classification. Month-end data are available from Dec. 31, 1954, to date in the Bank of Canada *Statistical Summary*.

11.—Assets and Liabilities of the Chartered Banks, as at Dec. 31, 1950-59

(Millions of dollars)

As at Dec. 31—	ASSETS							Total Assets ¹
	Bank of Canada Deposits and Notes	Canadian Day-to- Day Loans	Treasury Bills	Government of Canada Direct and Guaranteed Bonds	Other Canadian Securities, Insured Residential Mortgages and Loans in Canada	Canadian Dollar Items in Transit (net)	Foreign Cash Items, Securities and Loans	
1950.....	810	—	129	2,950	3,922	431	807	9,443
1951.....	892	—	236	2,518	4,052	512	869	9,458
1952.....	899	—	138	2,647	4,353	752	980	10,128
1953.....	883	—	244	2,516	4,878	751	1,064	10,656
1954.....	791	68	360	2,953	4,963	827	1,142	11,433
1955.....	840	81	427	2,632	6,207	1,002	1,127	12,702
1956.....	882	74	740	1,675	6,820	1,330	1,486	13,428
1957.....	866	210	805	1,835	6,953	1,151	1,970	14,244
1958.....	1,001	123	950	2,562	7,365	1,224	2,165	15,840
1959.....	953	101	974	1,827	8,172	919	2,393	15,835

¹ Includes other items not specified.

11.—Assets and Liabilities of the Chartered Banks, as at Dec. 31, 1950-59—concluded

As at Dec. 31—	LIABILITIES							
	Canadian Dollar Deposits					Foreign Currency Deposits	Share- holders' Equity	Total Liabilities ¹
	Government of Canada	Notice		All Other	Total			
		Personal Savings	Other Notice					
1950.....	257	4,176	383	3,164	7,979	835	361	9,443
1951.....	88	4,296	316	3,273	7,973	878	375	9,458
1952.....	49	4,600	325	3,662	8,636	905	381	10,128
1953.....	473	4,756	278	3,603	9,111	963	419	10,656
1954.....	176	5,218	397	3,891	9,683	1,030	521	11,433
1955.....	517	5,633	464	4,234	10,848	1,056	567	12,702
1956.....	246	6,007	444	4,465	11,162	1,369	653	13,428
1957.....	423	6,108	548	4,328	11,407	1,827	732	14,244
1958.....	319	6,844	618	4,909	12,690	2,077	813	15,840
1959.....	404	6,900	558	4,418	12,279	2,372	926	15,835

¹ Includes other items not specified.

12.—Detailed Statement of Chartered Bank Assets and Liabilities, as at Dec. 31, 1958 and 1959

Assets and Liabilities	1958	1959
	\$'000	\$'000
Assets—		
Gold and coin in Canada.....	22,647	25,509
Gold and coin outside Canada.....	1,771	1,352
Notes of and deposits with Bank of Canada.....	1,000,873	952,685
Government and bank notes other than Canadian.....	52,828	52,765
Deposits with other banks in Canadian currency.....	2,618	4,252
Deposits with other banks in currencies other than Canadian.....	344,512	360,842
Cheques and other items in transit (net).....	1,217,664	864,963
Government of Canada treasury bills.....	949,705	973,807
Other Government of Canada direct and guaranteed securities maturing within two years, not exceeding market value.....	826,069	657,484
Government of Canada direct and guaranteed securities maturing after two years, not exceeding market value.....	1,736,016	1,169,260
Canadian provincial government direct and guaranteed securities, not exceeding market value.....	415,151	346,168
Canadian municipal and school corporation securities, not exceeding market value.....	194,723	204,154
Other Canadian securities, not exceeding market value.....	553,994	512,401
Securities other than Canadian, not exceeding market value.....	493,584	525,973
Mortgages and hypothecs insured under the National Housing Act 1954, less provision for estimated loss.....	789,729	967,870
Call and short loans in Canada to brokers and investment dealers, secured.....	238,793	239,872
Call and short loans outside Canada to brokers and investment dealers, secured.....	612,629	711,064
Loans to Canadian provincial governments.....	68,729	38,574
Loans to Canadian municipalities and school corporations, less provision for estimated loss.....	216,818	231,268
Other current loans in Canada, less provision for estimated loss.....	5,008,852	5,731,669
Other current loans outside Canada, less provision for estimated loss.....	666,324	794,301
Non-current loans, less provision for estimated loss.....	1,382	1,399
Bank premises at cost, less amounts written off.....	177,164	205,780
Shares of and loans to corporations controlled by the bank.....	42,637	48,336
Customers' liability under acceptances, guarantees and letters of credit as <i>per contra</i>	196,988	206,808
Other assets.....	8,074	6,368
Totals, Assets.....	15,840,274	15,834,924
Liabilities—		
Deposits by Government of Canada in Canadian currency.....	319,161	403,585
Deposits by Canadian provincial governments in Canadian currency.....	136,332	136,357
Deposits by other banks in Canadian currency.....	136,726	137,656
Deposits by other banks in currencies other than Canadian.....	427,330	529,636

12.—Detailed Statement of Chartered Bank Assets and Liabilities, as at Dec. 31, 1958 and 1959 —concluded

Liabilities	1958	1959
	\$'000	\$'000
Liabilities—concluded		
Personal savings deposits payable after notice, in Canada, in Canadian currency....	6,843,687	6,899,639
Other deposits payable after notice, in Canadian currency.....	618,396	557,542
Other deposits payable on demand, in Canadian currency.....	4,635,915	4,144,353
Other deposits in currencies other than Canadian.....	1,049,191	1,842,151
Advances from Bank of Canada, secured.....	2,000	
Acceptances, guarantees and letters of credit.....	196,988	206,808
Other liabilities.....	61,755	51,549
Capital paid up.....	225,609	254,115
Reserve account.....	580,542	661,378
Undivided profits at latest fiscal year-end.....	6,642	10,155
Totals, Liabilities.....	15,840,274	15,834,924

13.—Canadian Cash Reserves, 1950-59

NOTE.—For periods prior to July 1954 all figures are daily averages; from July 1954, in accordance with the Bank Act 1954, Bank of Canada deposits are averages of the juridical days in the month shown while Bank of Canada notes and Canadian dollar deposits are averages of the four consecutive Wednesdays ending with the second last Wednesday in the previous month.

(Millions of dollars)

Year	Cash Reserves			Canadian Dollar Deposit Liabilities ¹	Average Cash Reserve Ratio ²
	Bank of Canada Deposits	Bank of Canada Notes	Total		
1950.....	548	207	755	7,487	10.1
1951.....	567	225	792	7,759	10.2
1952.....	606	239	844	8,110	10.4
1953.....	627	256	883	8,624	10.2
1954—January to June.....	634	260	894	8,820	10.1
1954—July to December.....	525	286	811	9,097	8.9
1955.....	541	293	834	9,915	8.4
1956.....	548	325	873	10,527	8.3
1957.....	535	335	870	10,601	8.2
1958.....	607	336	943	11,452 ^r	8.2
1959.....	648	351	999	12,187	8.2

¹ From July 1954 the figures are not adjusted for items in transit and are not strictly comparable with the figures for earlier periods. ² Prior to July 1, 1954, the statutory minimum requirement was 5 p.c. for each day; since that date it has been a monthly average of 8 p.c.

Liquid Asset Ratio.—In the course of discussions with the chartered banks in November and December 1955, the Bank of Canada urged the adoption of a standard practice regarding the maintenance of a minimum ratio of liquid assets (cash, day-to-day loans and treasury bills) to deposits. The purpose of this suggestion was to establish a working principle of bank operations which would help the central bank in the task of restraining inflationary pressures that might threaten in the future. After discussion the banks agreed to work to achieve by May 31, 1956, a minimum liquid asset ratio of 15 p.c. which they would endeavour to maintain on a daily average basis from June on. On this basis, fluctuations above or below 15 p.c. might occur from day to day or week to week, but for the month as a whole the average would not be below the target ratio. From June 1956 the banks have maintained a daily average ratio of at least 15 p.c.

14.—Classification of Chartered Bank Deposit Liabilities Payable to the Public in Canada in Canadian Currency, as at Sept. 30, 1958 and 1959

Deposit Accounts of the Public of—	1958			1959		
	Personal Savings Deposit Accounts	Other Deposit Accounts of the Public	Total Deposit Accounts of the Public	Personal Savings Deposit Accounts	Other Deposit Accounts of the Public	Total Deposit Accounts of the Public
	No.	No.	No.	No.	No.	No.
Less than \$100.....	5,005,640	873,840	5,879,480	5,267,719	997,856	6,265,575
\$100 or over but less than \$1,000.....	2,987,386	686,009	3,673,395	3,098,516	775,775	3,874,291
\$1,000 or over but less than \$10,000..	1,478,700	308,924	1,787,624	1,575,198	320,323	1,895,021
\$10,000 or over but less than \$100,000.	68,511	54,054	122,565	74,815	54,593	129,408
\$100,000 or over.....	905	6,179	7,084	896	5,528	6,424
Totals, Deposits.....	9,541,142	1,929,006	11,470,148	10,017,144	2,154,575	12,171,719

15.—Classification of Chartered Bank Loans in Canadian Currency, as at Dec. 31, 1958 and 1959

Class of Loan	1958	1959
	\$'000,000	\$'000,000
General Loans—		
Personal.....	898.0 ^a	1,060.9
To individuals, fully secured by marketable bonds and stocks.....	287.0	282.3
Home improvement loans.....	57.6	59.9
To individuals, not elsewhere classified.....	553.5 ^a	718.7
Farmers—		
Farm Improvement Loans Act.....	139.3	160.2
Other farm loans.....	228.5	229.3
Industry.....	1,165.9	1,231.7
Chemical and rubber products.....	63.4	67.6
Electrical apparatus and supplies.....	54.6	63.2
Foods, beverages and tobacco.....	207.7	211.8
Forest products.....	165.1	165.2
Furniture.....	21.2	23.3
Iron and steel products.....	166.7	188.9
Mining and mine products.....	135.3	110.0
Petroleum and products.....	98.9	98.2
Textiles, leather and clothing.....	139.4	160.9
Transportation equipment.....	75.4	74.5
Other products.....	60.5	75.0
Merchandisers.....	699.3	821.5
Construction contractors.....	261.9	308.2
Public utilities, transportation and communications.....	133.7 ^a	170.1
Other business.....	471.7	551.8
Religious, educational, health and welfare institutions.....	139.6	167.8
Totals, General Loans.....	4,137.8	4,701.4
Other Loans—		
Provincial governments.....	68.7	33.6
Municipal governments and school districts.....	216.8	231.3
Stockbrokers.....	54.2	71.7
Investment dealers.....	61.5	67.1
Loans to finance the purchase of Canada Savings Bonds.....	169.4	187.8
Grain dealers and exporters.....	351.0	434.4
Instalment and other finance companies.....	352.0	409.4
Totals, Other Loans.....	1,273.7	1,440.3
Grand Totals, Loans in Canadian Currency.....	5,411.5	6,141.7

16.—Chartered Bank Earnings, Expenses and Additions to Shareholders' Equity, Fiscal Years Ended in 1955-59

NOTE.—In 1955 the financial years of eight banks ended on Oct. 31, two on Nov. 30 and one on Sept. 30; in 1956 1957 and 1958 the financial years of six banks ended on Oct. 31, two on Nov. 30 and one on Sept. 30.

(Millions of dollars)

Item	1955	1956	1957	1958	1959
Current Operating Earnings—					
Interest and discount on loans.....	236.3	314.2	380.6	386.9	455.1
Interest, dividends and trading profits on securities ¹	128.4	102.8	118.4	160.5	169.4
Exchange, commission, service charges and other current operating earnings.....	89.0	96.5	109.5	126.0	122.3
Totals, Current Operating Earnings.....	453.7	513.5	608.5	673.4	746.8
Current Operating Expenses—					
Interest on deposits.....	105.2	129.1	163.4	203.4	241.2
Remuneration to employees.....	153.1	167.8	188.3	198.0	211.6
Contributions to pension funds.....	13.6	14.0	13.8	12.3	13.1
Provision for depreciation of bank premises.....	10.1	11.4	12.7	14.3	16.4
Other current operating expenses ^{2,3}	70.1	77.5	86.0	91.9	102.5
Totals, Current Operating Expenses ³	352.1	399.8	484.2	519.9	584.8
Net current operating earnings ²	101.6	113.7	124.3	153.5	162.0
Capital profits and non-recurring items ⁴	-0.6	3.1	0.4	1.5	3.3
Less provision for losses and addition to inner reserves, net ⁵	22.5	14.1	2.8	16.0	32.3
Less provision for income taxes ⁶	37.2	41.7	56.6	69.6	65.2
Leaving for dividends and shareholders' equity.....	41.3	61.0	65.3	69.4	67.8
Dividends to shareholders.....	26.2	31.9	35.4	40.0	47.6
Addition to shareholders' equity.....	15.1	29.1	29.9	29.4	20.2
ADDITIONS TO SHAREHOLDERS' EQUITY					
Undivided Profits—					
From operating earnings, net after transfers to rest account.....	2.4	-5.7	3.2	-1.5	2.7
Rest Account—					
From operating earnings and undivided profits.....	8.7	15.9	8.0	14.2	9.0
From retransfers from inner reserves.....	4.0	19.0	13.7	16.8	8.5
From premium on new shares.....	19.8	42.1	33.3	28.6	72.7
Capital Paid Up—					
From issue of new shares.....	13.7	14.2	16.5	10.5	31.7
NET ADDITION TO SHAREHOLDERS' EQUITY.....	48.6	85.5	79.7	68.6	124.7

¹ Realized profits and losses on disposal of securities are included in operating earnings. ² Before provision for income taxes, losses, and transfers to inner reserves. ³ Includes taxes other than income taxes. ⁴ Profits and losses on sale of fixed assets and adjustments relating to prior years. ⁵ After amounts retransferred to rest account. ⁶ Includes income taxes on taxable portion of additions to and amounts retransferred from inner reserves, and foreign income taxes.

Cheque Payments.—A monthly record of the amounts of cheques charged to customer accounts at all chartered bank offices in 35 major clearing-house centres of Canada is available from 1924. Except for a minor setback in 1938, the value of cheques cashed shows a continuously upward trend from 1932, the low point of the depression years. The total of \$248,869,352,000 in 1959 was a record, 705 p.c. greater than in 1938; the increase equalled the gain in gross national product during the same period. The advance was well distributed throughout Canada's five economic areas. British Columbia showed the largest gain with an increase of 810 p.c. Ontario was second with an advance of 753 p.c. followed in order by the Prairie Provinces, Atlantic Provinces and Quebec.* As compared with 1958, all five areas showed gains, with Ontario accounting for nearly 55 p.c. of the \$27,579,400,000 advance.

* St. John's, Nfld., was included in the 1959 figure but not in 1938 data. Excluding this centre in 1959 the ranking would be the same as above, except that Quebec would precede the Atlantic Provinces.

Value of cheques cashed in 34 of the 35 centres was higher in 1959 than in 1958. Payments in the two leading centres reached all-time highs, Toronto advancing nearly 15 p.c. and Montreal over 11 p.c. In the same comparison Winnipeg rose 8.2 p.c. and Vancouver 8.3 p.c.

17.—Cheques Cashed at 35 Clearing-House Centres, 1955-59

NOTE.—Figures for earlier years will be found in the corresponding table of previous Year Books.

Clearing-House Centre	1955	1956	1957	1958	1959
	\$	\$	\$	\$	\$
Atlantic Provinces	3,623,885,796	4,136,063,557	4,253,883,344	4,438,573,264	5,119,612,200
Halifax.....	1,627,402,746	1,900,368,542	1,862,262,193	1,952,996,188	2,240,973,028
Moncton.....	558,648,038	616,097,610	610,987,505	644,872,678	687,497,067
Saint John.....	720,696,563	824,915,065	974,094,965	974,038,472	1,240,459,744
St. John's.....	717,138,449	794,682,340	806,638,681	866,665,926	950,687,765
Quebec	47,931,766,648	57,635,780,762	60,153,465,596	63,318,151,553	70,466,037,915
Montreal.....	43,262,348,510	52,524,281,929	54,937,929,994	57,779,113,688	64,370,686,944
Quebec.....	4,220,646,837	4,575,848,864	4,675,308,837	4,994,969,283	5,515,387,714
Sherbrooke.....	448,771,301	535,649,969	540,226,765	544,068,582	579,963,257
Ontario	71,973,447,183	84,580,096,136	92,469,365,362	102,798,608,161	117,852,356,473
Brantford.....	529,527,130	596,455,633	587,964,512	611,025,605	692,884,865
Chatham.....	425,388,521	448,947,214	552,228,607	639,882,625	618,777,720
Cornwall.....	292,898,906	387,278,729	405,239,116	400,904,549	430,320,030
Fort William.....	354,323,721	410,549,615	455,892,329	458,694,532	483,013,614
Hamilton.....	3,556,484,589	4,179,292,551	4,355,968,082	4,681,253,378	5,784,746,402
Kingston.....	419,087,713	464,435,514	449,613,360	499,922,445	530,387,658
Kitchener.....	817,143,240	940,310,341	978,856,453	1,050,153,291	1,212,701,109 ¹
London.....	2,055,087,653	2,279,949,005	2,489,582,356	2,756,333,193	3,245,220,989
Ottawa.....	3,267,767,785 ¹	3,567,496,334 ¹	3,823,157,651 ¹	4,823,536,910 ¹	5,441,744,284 ¹
Peterborough.....	380,474,408	515,640,907	533,262,032	534,560,585	507,132,827
St. Catharines.....	683,520,885	780,623,214	795,132,217	800,628,561	847,322,290
Sarnia.....	476,917,287	552,812,970	571,839,628	589,935,036	610,219,199
Sudbury.....	497,174,554	580,450,567	641,458,123	613,036,685	646,385,049
Toronto.....	55,628,552,603	66,301,163,713	73,497,632,863	82,217,905,492	94,286,068,937
Windsor.....	2,589,098,188	2,574,689,829	2,331,538,033	2,120,835,274	2,422,431,509
Prairie Provinces	25,008,924,359	30,706,483,081	32,060,426,593	34,490,157,168	37,804,427,925
Brandon.....	191,777,756	217,917,059	222,033,280	229,039,246	247,763,532
Calgary.....	5,415,909,240	7,280,076,762	8,319,489,021	7,646,109,433	8,528,838,392
Edmonton.....	4,051,760,277	4,728,775,559	4,876,156,389	5,149,338,883	5,823,945,694
Lethbridge.....	354,898,604	401,410,718	421,533,161	441,664,205	498,786,593
Medicine Hat.....	146,543,311	176,626,478	193,144,298	201,480,020	226,497,863
Moose Jaw.....	295,191,500	324,438,043	340,909,600	392,210,021	394,069,743
Prince Albert.....	155,489,736	165,300,168	185,407,182	204,350,582	229,736,134
Regina.....	2,395,122,404	2,885,106,529	3,233,572,111	3,622,192,049	3,850,211,167
Saskatoon.....	708,209,073	773,856,439	849,665,371	971,923,570	1,085,022,733
Winnipeg.....	11,294,022,822	13,752,975,329	13,418,516,280	15,631,549,109	16,910,586,074
British Columbia	12,812,853,961	15,231,472,672	16,621,365,755	16,241,463,967	17,626,917,019
New Westminster.....	673,630,786	716,803,680	742,204,569	824,007,009	925,926,380
Vancouver.....	10,398,019,050	12,579,751,243	13,523,017,398	13,143,565,802	14,230,064,376
Victoria.....	1,741,204,125	1,934,917,749	2,356,083,788	2,276,891,156	2,470,926,263
Totals	161,350,877,947	192,289,896,211	205,558,446,650	221,289,954,113	248,869,351,532

¹ Includes some debits reported in preceding years.

Subsection 2.—Government and Other Banking Institutions

There are three distinct types of savings banks in Canada in addition to the savings departments of the chartered banks and of trust and loan companies: (1) the Post Office Savings Bank, in which deposits are a direct obligation of the Government of Canada; (2) Provincial Government savings banking institutions in Newfoundland, Ontario and Alberta, where the depositor becomes a direct creditor of the province; and (3) two important savings banks in the Province of Quebec—the Montreal City and District Savings Bank and La Banque d'Économie de Québec—established under federal legislation and reporting monthly to the federal Department of Finance. In addition, co-operative credit unions encourage savings among low-income classes and extend small loans to their members.

Post Office Savings Bank.—The Post Office Savings Bank was established under the Post Office Act of 1867 (SC 1867, c. 10) to “enlarge the facilities now available for the deposit of small savings, to make the Post Office available for that purpose, and to give the direct security of the nation to every depositor for repayment of all money deposited by him together with the interest due thereon”. Branches of the Government of Canada's Savings Bank under the Department of Finance were gradually amalgamated with this Bank over a period of 50 years and the amalgamation was completed in March 1929. Summary financial statistics for the years ended Mar. 31, 1957-60, follow. Figures back to 1868 are available in previous editions of the Year Book.

<i>Item</i>	<i>1957</i>	<i>1958</i>	<i>1959</i>	<i>1960</i>
	\$	\$	\$	\$
Deposits and interest.....	10,416,886	9,949,749	9,432,621	8,010,334
Deposits.....	9,663,774	9,097,664	8,611,890	7,235,391
Interest on deposits.....	753,112	852,085	820,731	774,943
Withdrawals.....	10,662,847	10,972,519	10,172,956	12,793,511
Balance on deposit.....	35,918,499	34,895,729	34,155,617	29,372,461

Provincial Government Savings Banks.—Institutions for the deposit of savings are operated by the Provincial Governments of Newfoundland, Ontario and Alberta.

Newfoundland.—The Newfoundland Savings Bank was established in 1834 and the following is a summary financial statement for the years ended Mar. 31, 1957-60.

<i>Item</i>	<i>1957</i>	<i>1958</i>	<i>1959</i>	<i>1960</i>
	\$	\$	\$	\$
Interest on investments, etc.....	972,347	951,295	974,296	1,066,382
Net rental income.....	2,849	3,611	2,585	2,949
Other income.....	—	—	—	1,268
Profit or loss on sale of investments.....	—1,664	—86,680	—116,181	—185,000
Less interest on deposits.....	748,780	758,257	766,786	773,932
Less expenses.....	56,716	65,597	74,009	77,966
Less transfer to reserves.....	31,118	31,137	6,307	6,366
NET INCOME.....	136,918	13,235	13,598	27,335

The number of accounts decreased from 35,187 at Mar. 31, 1959 to 34,791 at the same date of 1960; deposits decreased from \$28,307,692 to \$27,545,371 in the same comparison. The interest rate payable on deposits of private individuals, trust funds and estates is 3 p.c. per annum and on deposits of corporations 1½ p.c. per annum.

Ontario.—The establishment of the Province of Ontario Savings Office was authorized by the Ontario Legislature at the 1921 Session and the first branches were opened in March 1922. Interest at the rate of 2½ p.c. and 2½ p.c. per annum, compounded half-yearly, is paid on accounts, and deposits are repayable on demand. Total deposits at Mar. 31, 1960 were \$75,000,000 and the number of depositors was approximately 95,000. Twenty-one branches were in operation throughout the province.

Alberta.—Savings deposits are accepted at 50 Provincial Treasury Branches throughout Alberta. The total of these deposits at Mar. 31, 1959 was \$29,914,297, payable on demand and bearing interest at 2½ p.c. per annum.

The Provincial Treasury has issued demand certificates bearing interest at 1½ p.c. or term certificates for one, two, three, four or five years in denominations of \$25 and upwards, bearing interest at 2 p.c. for one or two years, 2½ p.c. for three or four years and

2½ p.c. for five years. The total amount in savings certificates at Mar. 31, 1959 was \$950, made up of \$850 in demand certificates and \$100 in term certificates. Deposits from the public for the purchase of such certificates were discontinued as of April 1951.

Quebec Savings Banks.—The Montreal City and District Savings Bank, founded in 1846 and now operating under a charter of 1871 had, at Mar. 31, 1960, a paid-up capital and reserve of \$9,500,000, savings deposits of \$236,379,417 and total liabilities of \$248,235,485. Total assets amounted to \$248,235,485, including \$157,000,000 of federal, provincial and municipal securities. La Banque d'Économie de Québec, founded in 1848 (as La Caisse d'Économie de Notre-Dame de Québec) under the auspices of the St. Vincent de Paul Society, incorporated by Act of the Canadian Legislature in 1855 and given a federal charter by SC 1871, c. 7, had, at Mar. 31, 1960, savings deposits of \$36,234,949 and a paid-up capital and reserve of \$3,000,000. Liabilities amounted to \$46,556,793 and total assets to a like amount.

The following statement shows the combined savings deposits in the Montreal City and District Savings Bank and La Banque d'Économie de Québec for the years ended Mar. 31, 1951-60. Figures back to 1868 are available in previous editions of the Year Book.

<i>Year</i>	<i>Deposits</i>	<i>Year</i>	<i>Deposits</i>
	\$		\$
1951.....	193,982,871	1956.....	256,526,482
1952.....	200,342,385	1957.....	255,000,311
1953.....	214,122,001	1958.....	266,585,424
1954.....	219,372,081	1959.....	279,626,478
1955.....	237,816,198	1960.....	272,614,366

Credit Unions.—Credit unions are incorporated under provincial law to enable groups of people with a common bond of association to pool their savings. The bond of association may be membership in a parish, club, lodge or labour union, that of employment in a plant, industry or department, or that of residence in a rural or a well-defined urban community. The figures of Table 18 show the growing importance of credit unions as savings and loan institutions in Canada. During the ten years 1949-58 the number of credit unions chartered increased by 57 p.c., the number of members in reporting organizations by 135 p.c. and the assets of reporting organizations by 257 p.c., the latter passing the billion-dollar-mark for the first time in 1958.

Quebec holds the lead in the Canadian credit union movement, having more than half of the total membership of all credit unions across the country. Ontario runs close to Quebec in number but total membership and assets in that province are much lower. All provinces except Newfoundland shared in the increase in membership reported for 1958.

About 38 p.c. of the credit unions in Canada are rural, although there is some variation as to type in different areas of the country. In the Atlantic Provinces, Quebec and Saskatchewan the credit unions are predominantly rural. In Ontario the occupational type of union accounted for 55 p.c. of the total in 1958 and occupational credit unions also lead in Alberta and British Columbia. In Manitoba, rural and occupational types are about equal. Recently the greatest gain has been shown in the occupational group.

Loans are granted to members for provident and productive purposes from the accumulated pooled savings and are mostly secured by personal notes. Loans to members in 1958 amounted to \$394,000,000, at interest rates of 1 p.c. per month or less on the unpaid balance. There were 27 central credit unions in 1958 having the main purpose of acting as credit unions for credit unions, namely, to receive deposits from and make loans to individual credit unions. These centrals are incorporated under provincial legislation to facilitate the flow of funds to credit unions that cannot meet the demand for local loans. Some of these central credit unions admit co-operative associations to membership but most of them limit their membership to credit unions.

The Canadian Co-operative Society serves as a central credit union for provincial centrals and co-operatives all across Canada.

18.—Credit Unions in Canada, 1949-58

Year	Credit Unions Chartered	Credit Unions Reporting	Members ¹	Assets ¹
	No.	No.	No.	\$
1949.....	2,819	2,705	940,427	282,242,278
1950.....	2,965	2,801	1,036,175	311,532,143
1951.....	3,121	2,952	1,137,931	358,646,767
1952.....	3,335	3,080	1,260,435	424,400,375
1953.....	3,606	3,413	1,434,270	489,266,090
1954.....	3,920	3,690	1,560,715	552,362,571
1955.....	4,100	3,899	1,731,328	652,553,665
1956.....	4,253	3,973	1,870,227	761,255,685
1957 ^a	4,389	4,044	2,059,835	852,219,000
1958.....	4,436	4,197	2,212,698	1,007,909,000

¹ Reporting organizations only.

19.—Summary Statistics of Credit Unions, by Province, 1958

Province	Credit Unions Chartered	Credit Unions Reporting	Members ¹	Assets ¹	Shares ¹	Deposits ¹	Loans to Members during Year ¹	Total Loans since Inception ¹
	No.	No.	No.	\$'000	\$'000	\$'000	\$'000	\$'000
Newfoundland.....	68	53	3,234	373	317	13	274	3,919
P. E. Island.....	58	46	9,514	1,464	1,192	108	786	8,976
Nova Scotia.....	210	206	58,005	12,497	11,153	304	8,909	67,272
New Brunswick.....	164	163	78,162	13,602	12,230	157	6,194	57,472
Quebec—								
Desjardins.....	1,192	1,185	1,065,224	578,454	36,809	510,824	129,700	1,169,700
Que. League.....	227	197	67,700	20,202	19,241	2	11,631	61,180
Montreal Fed'n.....	19	19	45,277	40,278	2,592	35,057	10,047	63,272
Ontario.....	1,415	1,296	478,747	160,213	113,112	28,032	119,572	560,738
Manitoba.....	227	217	74,174	27,765	20,588	4,322	20,347	111,516
Saskatchewan.....	279	267	103,289	56,450	42,903	9,561	25,740	178,440
Alberta.....	256	246	61,975	20,715	18,133	1,079	14,823	85,235
British Columbia.....	321	302	167,397	75,896	64,426	3,595	46,164	249,570
Totals.....	4,436	4,197	2,212,698	1,007,909	342,696	593,052	394,187	2,617,290

¹ Reporting organizations only.² Included with Share

Section 4.—Foreign Exchange

The dollar, established officially as the currency of the united provinces of Canada on Jan. 1, 1858, and extended to cover the New Dominion by the Uniform Currency Act of 1870, was defined as 15/73 of the British gold sovereign.* That is, the par rate of exchange between the dollar and the pound sterling was fixed at \$4.866, making the Canadian currency the equivalent of the United States dollar at parity. With minor variations between the import and export gold points representing the cost of shipping gold in either direction, the value of the pound sterling in Canada remained at this level until the outbreak of World War I. The United States dollar, on the other hand, was at a discount in terms of Canadian funds for the first eleven years after Confederation since it was not redeemable in gold from February 1862 to January 1879. On the basis of gold equivalents it would appear that the greatest monthly average discount on the United States dollar after Confederation was approximately 31 p.c., reached in August 1868. From 1879 to 1914 the dollars of the two countries remained at par, varying only within the gold points or under \$2 per thousand.

* The gold sovereign remained the standard for the Canadian dollar until 1910 when the currency was defined in terms of fine gold, making it the exact gold equivalent of the United States dollar. Both British and United States gold coins were, however, legal tender in Canada for this whole period.

On the outbreak of World War I, Canada and the United Kingdom suspended the gold standard. For some weeks both the pound and the Canadian dollar rose to a premium in New York. Subsequently both fell back with the pound going to a slight discount. In January 1916 the pound was officially pegged at \$4.76 in American funds. This level was maintained with the help of funds realized by sales of United States securities owned by residents of the United Kingdom, by borrowing in the United States and, after the American entry into the War, by the United States Government financing Allied purchases in that country.

From 1915 to the end of 1917 fluctuations in the rate of exchange between the Canadian and United States dollars did not exceed 2 p.c. on either side of parity; the pound was stable in terms of United States dollars during this period. In 1918 the Canadian dollar began to weaken. After the pound was unpegged in 1919 the Canadian dollar declined further and in 1920 it fell to 82 cents in New York with sterling going as low as \$3.18.

By the latter half of 1922 the Canadian dollar had returned practically to par in New York. Despite some further weakness in sterling, the dollar remained close to that level during the next two years, averaging 98.04 and 98.73 cents in terms of the United States dollar in 1923 and 1924, respectively, and fluctuating between a discount of about 3.6 cents and a premium of approximately 0.4 cents. After the United Kingdom resumed gold payments in April 1925, the range of fluctuation of the Canadian dollar narrowed further. From Canada's return to the gold standard in the period July 1, 1926 to January 1929, the exchange rate remained within the gold points. The Canadian dollar then went to a slight discount in New York. With the exception of the period July to November 1930,* when it went to a small premium in New York, the dollar remained below parity until the United Kingdom abandoned the gold standard in September 1931. After that month the pound sterling depreciated sharply and the Canadian dollar followed, reaching lows* in New York of 80.5 cents in December 1931 and 82.6 cents in April 1933.

Following the prohibition of gold exports in the latter month by the United States, the pound and the Canadian dollar strengthened rapidly in terms of American funds. By November 1933, both currencies had reached a premium in New York. Meanwhile in a series of steps beginning with permitting the export of newly mined gold in August 1933, the United States moved towards resumption of the gold standard. As of Feb. 1, 1934, the United States Treasury undertook to buy all gold offered at \$35 per ounce. After that the exchange rate between the Canadian and United States dollars stabilized. Until the outbreak of war in 1939 much of the trading was conducted within one cent of parity although the Canadian dollar in New York did go as high as 103.6 cents (September 1934) and as low as 98.0 cents (September 1938).*

On the outbreak of World War II in September 1939, the United Kingdom and other sterling countries introduced foreign exchange control involving fixed buying and selling rates of \$4.02½ and \$4.03½, respectively, in terms of the U.S. dollar. The Canadian dollar in New York declined until Sept. 16, 1939, when the Government instituted foreign exchange control† in Canada and established fixed buying and selling rates of \$1.10 to \$1.11 for the U.S. dollar and \$4.43 to \$4.47 for sterling. As compared with previous months, the depreciation of the Canadian dollar in terms of United States funds was approximately half as great as that of the pound sterling.

Apart from a minor adjustment on Oct. 15, 1945, when selling rates for U.S. dollars and sterling were lowered to \$1.10½ and \$4.45, respectively, the official rates for the Canadian dollar remained unchanged until July 5, 1946. At that time the rate on the U.S. dollar was restored to par, with buying and selling rates for that currency of \$1.00 to \$1.00½ and for sterling \$4.02 to \$4.04. These rates continued in effect until Sept. 19, 1949 when, following a 30.5-p.c. reduction by the United Kingdom in the value of sterling to \$2.80 U.S. (an action which was paralleled in varying degrees by numerous other cur-

* Noon quotations. Daily highs and lows may have exceeded these rates.

† The operations of the Foreign Exchange Control Board from the time of its establishment to the termination of exchange control in December 1951 are reviewed in previous editions of the Year Book.

rencies), Canada returned to the former official rates of \$1.10 and \$1.10½ for United States funds. Sterling was quoted at \$3.07½ and \$3.08½ on the basis of the New York cross rate.

On Sept. 30, 1950, the Minister of Finance announced that official fixed foreign exchange rates which had been in effect at varying levels since 1939 would be withdrawn effective Oct. 2. Since then the Government's policy has been to allow the rate to be determined by the normal play of economic forces without official intervention by the Exchange Fund Account except to ensure orderly conditions in the foreign exchange market. No attempt is made to reverse persistent trends, but only to smooth out excessive short-run fluctuations.

Until Dec. 14, 1951, this policy was carried out within the framework of exchange control. On that date the Foreign Exchange Control regulations were revoked by the Governor in Council and new regulations were passed which exempted all persons and transactions from the various requirements of the Foreign Exchange Control Act. These actions terminated exchange control in Canada and the Foreign Exchange Control Act was repealed in 1952.

The movements of the U.S. dollar in Canadian funds from January 1952 to the end of 1959 are shown in Table 20.

20.—Price of the United States Dollar in Canada, by Month, 1952-59

NOTE.—Rates published by Bank of Canada. Noon average market rate for business days in period.

(Canadian cents per U.S. dollar)

Month	1952	1953	1954	1955	1956	1957	1958	1959
January.....	100.48	97.05	97.29	96.60	99.87	96.07	98.47	96.69
February.....	100.10	97.73	96.65	97.69	99.91	95.83	98.10	97.49
March.....	99.59	98.33	97.08	98.43	99.87	95.61	97.73	96.98
April.....	98.09	98.37	98.25	98.63	99.68	95.97	97.06	96.35
May.....	98.38	99.41	98.43	98.59	99.18	95.56	96.69	96.29
June.....	97.92	99.44	98.13	98.44	98.53	95.32	96.18	95.88
July.....	96.91	99.18	97.44	98.46	98.18	95.09	96.00	95.74
August.....	96.11	98.83	97.02	98.51	98.12	94.80	96.46	95.44
September.....	95.98	98.43	96.97	98.78	97.77	95.92	97.68	95.16
October.....	96.43	98.25	96.98	99.53	97.32	96.47	97.07	94.77
November.....	97.66	97.77	96.92	99.94	96.44	96.24	96.83	95.03
December.....	97.06	97.31	96.80	99.95	96.05	97.74	96.46	95.12
Annual Average.....	97.89	98.34	97.32	98.63	98.41	95.88	97.06	95.90

21.—Canada's Official Holdings of Gold and United States Dollars, as at Dec. 31, 1942-59

NOTE.—Holdings comprise gold, U.S. dollars and short-term securities of the U.S. Government held by the Exchange Fund Account, other government accounts and net holdings of the Bank of Canada.

(Millions of U.S. dollars)

Year	Gold	U.S. Dollars	Total
1942.....	154.9	163.6	318.5
1943.....	224.4	425.2	649.6
1944.....	293.9	608.3	902.2
1945.....	353.9	1,154.1	1,508.0
1946.....	536.0	708.9	1,244.9
1947.....	286.6	215.1	501.7
1948.....	401.3	596.5	997.8
1949.....	436.4	630.7 ¹	1,117.1 ¹
1950.....	580.0	1,161.5	1,741.5
1951.....	841.7	936.9	1,778.6
1952.....	885.0	975.2	1,860.2
1953.....	986.1	832.4	1,818.5
1954.....	1,072.7	869.9	1,942.6
1955.....	1,133.9	766.9	1,900.8
1956.....	1,103.3	832.9	1,936.2
1957.....	1,100.3	725.0	1,825.3
1958.....	1,078.1	861.0	1,939.1
1959.....	959.6 ²	909.6	1,869.2 ²

¹ Does not include \$18,200,000 in U.S. funds borrowed in the U.S. in August 1949 by the Government of Canada and set aside for the purpose of retiring an equal amount of certain securities payable in U.S. dollars on Feb. 1, 1950.

² On Oct. 1, 1959, \$62,500,000 representing the gold portion of Canada's increased quota was transferred to the International Monetary Fund.

PART II.—MISCELLANEOUS COMMERCIAL FINANCE

Section 1.—Loan and Trust Companies*

An outline of the development of loan and trust companies in Canada from 1844 to 1913 is given in the 1934-35 Year Book, p. 993. The laws relating to loan and trust companies were revised by the Loan and Trust Companies Acts of 1914 (RSC 1952, cc. 170 and 272), with the result that the statistics of provincially incorporated loan and trust companies ceased to be collected. However, summary information has been supplied by provincial companies since 1922 and figures for the years 1957 and 1958 are included in Table 1 in order to complete the statistics for loan and trust companies throughout Canada. It is estimated that more than 95 p.c. of the business of provincial companies is represented in the figures, so that they may be accepted as fairly inclusive and representative of the volume of business transacted as compared with the federally licensed companies.

The statistics of Tables 2 and 3 refer to those companies incorporated both by the Government of Canada and by the provinces. Included in the statistics of federal companies are data of loan and trust companies incorporated by the Province of Nova Scotia and brought by the laws of that province under the examination of the federal Department of Insurance, as well as data for trust companies in New Brunswick and Manitoba.

The progress of the aggregate of loan company business in Canada is indicated by the increase in the book value of the assets of all loan companies from \$188,186,072 in 1923 to \$605,373,501 in 1958. The assets of trust companies (not including estates, trust and agency funds, which cannot be regarded as assets in the same sense as company and guaranteed funds) increased from \$154,202,165 in 1928 to \$970,398,170 in 1958. In the former year the total of estates, trust and agency funds administered amounted to \$1,077,953,643 and in 1958 to \$6,318,998,234.

Functions of Loan Companies.—The principal function of loan companies is the lending of funds on first-mortgage security, the money thus made available for development purposes being secured mainly by the sale of debentures to the investing public and by savings department deposits. The extent of investments in mortgages by federal and provincial loan companies may be gauged by the following figures: total assets of such companies for the years 1957 and 1958 amounted to \$549,071,796 and \$605,373,501, respectively, which amounts include mortgage loans of \$420,635,499 and \$456,689,053, respectively; thus, the resulting percentages of mortgages to total assets for those years were approximately 77 p.c. and 75 p.c., respectively. The data for 1957 includes for the first time the figures of one loan company incorporated under the laws of Quebec (the capital stock of which has been issued largely outside of Canada but whose debentures for the greater part are now held in Canada) having, as at Dec. 31, 1958, assets of \$87,887,641 including mortgage loans amounting to \$75,323,498, and liabilities to the public of \$55,129,658.

Functions of Trust Companies.—Trust companies act as executors, trustees and administrators under wills or by appointment, as trustees under marriage or other settlements, as agents or attorneys in the management of the estates of the living, as guardians of minor or incapable persons, as financial agents for municipalities and companies, as transfer agents and registrars for stocks and bond issues, as trustees for bond issues and where so appointed, as authorized trustees in bankruptcy. Such companies receive deposits for investment but the investing and lending of such deposits and of actual trust funds are restricted by law.

* Revised under the direction of the Superintendent of Insurance for Canada, Ottawa.

Statistics of Loan and Trust Companies.—A summary of operations of provincial and federal loan and trust companies is given in Table 1. As a result of the nature of the operations of the latter companies, which are intimately connected with the matter of probate, the larger trust companies usually choose to operate under provincial charters and the provincial figures represent much larger amounts than those of the federal companies.

The figures for federal loan companies include companies chartered by the Government of Nova Scotia which, by arrangement, come under inspection by the federal Department of Insurance. The data for federal trust companies cover companies chartered by the Governments of Nova Scotia, New Brunswick and Manitoba for the same reason.

1.—Operations of Provincial and Federal Loan and Trust Companies, as at Dec. 31, 1957 and 1958

Item	1957			1958		
	Provincial Companies	Federal Companies	Total	Provincial Companies	Federal Companies	Total
	\$	\$	\$	\$	\$	\$
Loan Companies—						
Assets (book values).....	228,927,416	320,144,380	549,071,796	246,637,900	358,735,601	605,373,501
Liabilities to the public.....	160,429,357	280,238,094	440,667,451	178,348,999	314,971,124	493,320,123
Capital Stock—						
Authorized.....	37,806,677	53,000,000	90,806,677	36,011,074	53,000,000	89,011,074
Subscribed.....	25,960,670	18,058,461	44,019,131	25,051,457	19,069,224	44,120,681
Paid up.....	21,395,380	17,695,087	39,090,467	20,085,710	18,726,524	38,812,234
Reserve and contingency funds...	38,896,098	20,527,887	59,423,985	39,933,681	24,020,837	63,954,518
Surplus.....	8,206,581	1,207,196	9,413,777	8,269,510	1,017,116	9,286,626
Total liabilities to shareholders...	68,498,059	39,430,170	107,928,229	68,288,901	43,764,477	112,053,378
Gross profits realized during year ¹ .	5,967,773	5,393,392	11,361,565	5,314,364	5,895,086	11,209,450
Trust Companies—						
Assets (book values)—						
Company funds.....	97,258,395	38,843,072	136,101,467	106,914,805	36,551,294	143,466,099
Guaranteed funds.....	472,678,645	176,964,312	649,642,957	588,188,712	238,743,359	826,932,071
Totals, Assets.....	569,937,040	215,807,384	785,744,424	695,103,517	275,294,653	970,398,170
Estates, trust, and agency funds...	4,605,817,867	886,560,559	5,492,378,426	5,328,920,074	990,078,160	6,318,998,234
Capital Stock—						
Authorized.....	56,585,000	36,000,000	92,585,000	60,475,000	31,500,000	91,975,000
Subscribed.....	32,148,510	18,676,680	50,825,190	32,354,760	16,790,650	49,145,410
Paid up.....	31,600,360	18,332,563	49,932,923	31,734,725	16,565,308	48,300,033
Reserve and contingency funds....	39,320,428	13,099,813	52,420,241	44,356,427	16,385,119	60,741,546
Surplus.....	8,398,518	2,653,073	11,051,591	8,906,239	1,637,580	10,543,819
Gross profits realized during year ¹	9,157,279	3,713,640	12,870,919	10,023,283	4,241,979	14,265,262

¹ Profits before income taxes.

2.—Assets and Liabilities of Loan Companies, 1954-58

Item	CHARTERED BY GOVERNMENT OF CANADA ¹				
	1954	1955	1956	1957	1958
	\$	\$	\$	\$	\$
Assets					
Real estate ²	5,768,982	5,699,194	7,196,820	8,176,745	8,503,266
Mortgage loans and agreements of sale..	178,968,416	200,118,391	227,370,747	245,459,582	269,539,879
Collateral loans.....	139,250	155,562	180,793	249,551	238,477
Bonds and debentures.....	48,807,414	50,187,515	36,623,327	39,190,957	51,544,496
Stocks.....	12,163,845	14,058,759	16,246,819	15,907,174	17,894,334
Cash.....	7,916,073	8,781,617	7,015,991	8,578,259	7,382,089
Totals, Assets³.....	255,446,553	281,004,269	296,715,805	320,144,380	358,735,601
Liabilities					
Liabilities to Shareholders—					
Capital paid up.....	16,080,222	16,545,334	17,622,027	17,695,087	18,726,524
Reserves.....	16,604,475	17,458,300	19,271,324	20,527,887	24,020,837
Totals, Liabilities to Shareholders⁴..	33,604,179	35,076,130	38,071,506	39,430,170	43,764,477
Liabilities to the Public—					
Debentures.....	120,816,931	130,264,215	146,839,303	169,507,160	183,237,073
Deposits.....	97,696,275	111,557,968	106,671,012	105,761,097	124,444,060
Totals, Liabilities to the Public⁵.....	221,612,649	245,606,324	258,245,799	280,238,094	314,971,124
Totals, Liabilities.....	255,216,828	280,682,454	296,317,305	319,668,264	358,735,601
CHARTERED BY PROVINCES ⁶					
	1954	1955	1956	1957 ⁷	1958
	\$	\$	\$	\$	\$
Assets					
Real estate ²	1,193,695	856,504	986,728	3,438,381	3,086,620
Mortgage loans and agreements of sale..	87,292,830	96,847,710	104,062,678	175,175,917	187,149,974
Collateral loans.....	1,019,631	1,035,965	1,194,450	3,381,018	2,938,213
Bonds and debentures.....	22,094,106	23,017,586	26,377,550	26,409,535	34,005,594
Stocks.....	2,298,200	2,782,701	3,176,295	6,700,522	7,707,552
Cash.....	3,274,065	4,261,283	3,837,228	8,723,799	6,549,746
Totals, Assets³.....	117,936,572	129,589,371	140,453,366	228,927,416	246,637,900
Liabilities					
Liabilities to Shareholders—					
Capital paid up.....	9,808,065	9,890,439	10,929,428	21,395,380	20,085,710
Reserves.....	15,090,685	16,694,396	18,149,014	38,896,098	39,933,681
Totals, Liabilities to Shareholders⁴..	29,852,739	31,671,971	34,876,071	68,498,059	68,288,901
Liabilities to the Public—					
Debentures.....	26,556,895	28,696,549	30,139,135	73,586,634	81,935,674
Deposits.....	59,683,140	67,587,267	73,543,730	82,434,034	91,774,807
Totals, Liabilities to the Public⁵.....	88,083,833	97,917,400	105,577,295	160,429,357	178,348,999
Totals, Liabilities.....	117,936,572	129,589,371	140,453,366	228,927,416	246,637,900

¹ Includes companies chartered by the Government of Nova Scotia which, by arrangement, are inspected by the federal Department of Insurance.

² Book value of real estate for company use and other real estate.

³ Includes interest due and accrued and other assets.

⁴ Includes surplus.

⁵ Includes other liabilities

to the public.

⁶ Exclusive of Nova Scotia.

⁷ Includes, for the first time, one loan company incorporated under the laws of Quebec (see text, p. 1148).

3.—Assets and Liabilities of Trust Companies, 1954-58

Item	CHARTERED BY GOVERNMENT OF CANADA ¹				
	1954	1955	1956	1957	1958
Assets	\$	\$	\$	\$	\$
Company Funds ^{2,3}	29,451,872	32,090,504	36,690,878	38,943,072	36,551,294
Real estate ⁴	2,181,017	2,446,182	2,856,671	2,988,961	3,500,377
Mortgage loans and agreements of sale.....	6,315,655	6,947,633	9,399,887	9,514,144	8,678,270
Collateral loans.....	610,784	593,086	507,486	404,577	293,660
Bonds and debentures.....	11,584,230	12,538,063	14,467,349	15,743,144	14,235,122
Stocks.....	4,498,384	5,314,098	5,500,185	5,881,192	5,765,935
Cash.....	3,156,458	3,136,361	2,506,028	2,876,263	3,155,689
Guaranteed Funds ^{2,3}	140,601,795	159,235,891	170,344,746	176,964,312	238,743,359
Mortgage loans on real estate.....	59,027,501	78,009,884	90,669,596	95,833,151	122,379,881
Collateral loans.....	5,577,269	4,875,283	6,610,998	4,729,770	7,180,379
Bonds and debentures.....	68,610,990	68,265,804	60,310,896	66,029,880	99,188,148
Stocks.....	1,898,885	2,127,899	1,561,694	1,539,685	1,650,340
Cash.....	4,273,214	4,592,425	9,731,317	7,234,502	6,058,157
Liabilities					
Company Funds ⁵	28,850,642	31,905,971	36,381,834	38,583,249	36,551,294
Capital paid up.....	14,653,624	15,407,916	17,327,010	18,332,563	16,565,308
Reserves.....	10,822,267	12,267,502	11,911,366	13,099,813	16,385,119
Guaranteed Funds—Trust Deposits and Certificates.....	140,601,795	159,235,891	170,344,746	176,964,312	238,743,359
CHARTERED BY PROVINCES ⁶					
	1954	1955	1956	1957	1958
Assets	\$	\$	\$	\$	\$
Company Funds ^{2,3}	83,140,092	88,360,564	91,554,381	97,258,395	106,914,805
Real estate ⁴	7,823,819	8,411,623	8,763,967	11,735,804	15,173,335
Mortgage loans on real estate.....	13,016,509	14,060,244	12,812,273	10,330,834	9,770,939
Collateral loans.....	8,799,177	9,131,608	11,217,620	12,145,388	12,896,627
Bonds and debentures.....	25,690,753	25,491,913	24,123,965	25,342,514	24,235,427
Stocks.....	19,996,998	22,151,675	24,905,523	29,161,353	31,922,199
Cash.....	3,891,065	4,760,662	4,662,121	3,222,485	6,673,663
Guaranteed Funds ²	383,697,760	437,168,231	446,448,674	472,678,645	588,188,712
Mortgage loans on real estate.....	99,835,875	128,630,198	155,096,475	159,294,108	202,195,999
Collateral loans.....	20,265,826	24,790,574	19,828,245	29,846,537	41,652,942
Bonds and debentures.....	239,473,762	252,047,774	238,455,688	253,111,774	301,913,159
Stocks.....	978,378	1,286,070	2,212,005	1,911,365	2,597,947
Cash.....	21,553,634	28,110,463	28,037,961	25,235,015	36,316,995
Liabilities					
Company Funds ⁵	83,140,092	88,360,564	91,554,381	97,258,395	106,914,805
Capital paid up.....	29,870,940	30,932,370	30,901,805	31,600,360	31,724,725
Reserves.....	31,674,933	35,496,257	36,661,034	39,320,425	44,356,427
Guaranteed Funds—Trust Deposits and Certificates.....	383,697,760	437,168,231	446,448,674	472,678,645	588,188,712

¹ Includes companies chartered by the Governments of Nova Scotia, New Brunswick and Manitoba, which, by arrangement, are inspected by the Federal Department of Insurance. ² Includes other assets.

³ Includes interest due and accrued.

⁴ Includes other company fund liabilities.

⁵ Includes other company fund liabilities.

⁶ Chartered by all provinces except Nova Scotia, New Brunswick and Manitoba (see text, p. 1149).

4.—Estates, Trust and Agency Funds of Trust Companies, Chartered by or Supervised by the Federal Government and by Provincial Governments, as at Dec. 31, 1949-58

Year	Federal Companies ¹	Provincial Companies ²	Total	Year	Federal Companies ¹	Provincial Companies ²	Total
	\$	\$	\$		\$	\$	\$
1949.....	560,080,611	2,827,988,797	3,388,069,408	1954.....	663,520,956	3,734,874,516	4,398,395,472
1950.....	494,636,746	3,126,058,749	3,620,695,495	1955.....	734,670,479	3,985,662,299	4,720,332,778
1951.....	543,983,754	3,282,558,573	3,826,542,327	1956.....	815,367,349	4,318,560,879	5,133,928,228
1952.....	588,550,279	3,383,650,088	3,972,200,367	1957.....	886,560,559	4,695,817,867	5,582,378,426
1953.....	631,231,540	3,470,781,614	4,102,013,154	1958.....	990,078,160	5,328,920,074	6,318,998,234

¹ Includes companies chartered by the Governments of Nova Scotia, New Brunswick and Manitoba which, by arrangement, are inspected by the federal Department of Insurance. ² Excludes provincial companies of Nova Scotia, New Brunswick and Manitoba which are included in federal companies.

Section 2.—Licensed Small Loans Companies and Licensed Money-Lenders*

Licensed small loans companies and licensed money-lenders are subject to the provisions of the Small Loans Act (RSC 1952, c. 251) as amended by c. 46 of the Statutes of 1956, an enactment of the Parliament of Canada regulating personal loans not in excess of \$1,500 made on the security of promissory notes of borrowers. Most of these notes are additionally secured by endorsements or chattel mortgages. The Act permits, in the case of licensed lenders, maximum rates of cost of loan, including charges of every kind, of 2 p.c. per month on that portion of the unpaid balance of a loan not exceeding \$300, 1 p.c. per month on that portion of the balance exceeding \$300 but not exceeding \$1,000, and one-half of 1 p.c. per month on any remainder of the balance exceeding \$1,000. The maximum rate permitted to be charged by an unlicensed lender is 1 p.c. per month. Prior to Jan. 1, 1957, the scope of the Act extended only to loans of \$500 and under and the maximum rate permitted to be charged by licensed lenders was 2 p.c. per month and by unlicensed lenders 12 p.c. per annum. The small loans companies—four in number—were incorporated by special Acts of the Parliament of Canada, the first such company commencing business in 1928. Money-lenders, of which there are 76, are made up of companies otherwise incorporated and include a few partnerships and individuals. Table 5 gives the combined financial experience of small loans companies and licensed money-lenders for the years 1955-58.

* Further details are given in the Department of Insurance report *Small Loans Companies and Money-Lenders* for the year ended Dec. 31, 1958.

5.—Assets and Liabilities of Small Loans Companies and Money-Lenders, 1955-58

Assets and Liabilities	1955	1956	1957 ¹	1958 ¹
	\$	\$	\$	\$
Assets	208,517,770	262,386,415	326,549,959	408,581,861
Small loan balances.....	88,844,506	88,428,203	229,199,629	315,827,669
Balances, large loans and other contracts.....	109,530,841	160,743,235	86,534,064	81,597,731
Cash.....	4,975,980	6,308,752	5,287,550	5,334,230
Other.....	5,166,443	6,906,225	5,528,716	5,822,231
Liabilities	208,517,770	262,386,415	326,549,959	408,581,861
Borrowed money.....	149,688,502	191,697,344	258,184,531	326,274,370
Reserves for losses.....	5,028,544	5,607,582	6,766,856	8,454,003
Paid-up capital.....	12,264,662	13,978,275	14,992,722	26,620,273
Surplus paid in by shareholders.....	11,578,629	12,078,629	12,478,629	9,475,379
Earned surplus.....	17,814,639	12,497,185	18,184,528	17,877,114
Other.....	12,142,794	26,527,400	15,942,693	19,880,717

¹ Commencing Jan. 1, 1957, the Small Loans Act became applicable to loans of \$1,500 or under made on and after that date (see text above).

The combined companies showed a substantial increase in the amount of business for 1958 as compared with 1957. While the number of small loans made to the public during the year 1958 increased from 1,075,322 to 1,107,500 or by only 3 p.c., the amount of such loans rose from \$368,392,107 to \$477,705,515 or by 30 p.c. The average small loan made was approximately \$431 in 1958 compared with \$343 in 1957. At the end of 1958 small loans outstanding numbered 892,111 for an amount of \$315,827,669 or an average \$354 per loan. These figures compare with 812,135, \$229,199,621 and \$282, respectively, for 1957.

Section 3.—Sales of Canadian Bonds*

Previous editions of the Year Book have traced sales of Canadian bonds to the end of 1958. This review continues a record of new issues placed in 1959 with some reference to developments in the first half of 1960.

Although there were wide variations in different types of financing, new issues came on the bond market in 1959 at approximately the same over-all dollar total as in 1958 and 1957 and at about the level of 1954. On the other hand, they were considerably above the totals for 1956 and 1955 as well as for the years previous to 1954. Grand totals were \$4,220,000,000 in 1959, \$4,600,000,000 in 1958, \$4,490,000,000 in 1957, and \$4,460,000,000 in 1954; they compared with \$3,090,000,000 in 1956, \$2,660,000,000 in 1955 and \$2,940,000,000 in 1953.

With the exception of Series 14, 1959, final totals for which were not available at time of writing, these calculations include complete totals for all Savings Loan issues in previous years, i.e., either up to the year-end, or to a closing date within the year, or to a closing date in subsequent years. They exclude all Federal Government financing of less than one year such as the weekly treasury bill issues, which totalled \$6,940,000,000 in 1959, \$6,760,000,000 in 1958, and \$6,530,000,000 in 1957. With the addition of treasury bill issues, the total for all new financing would amount to \$11,170,000,000 in 1959, \$11,360,000,000 in 1958 and \$11,020,000,000 in 1957.

Also excluded is the Canada Conversion Loan of 1958 which was issued for the refunding of the 5th to 9th Victory Loans (dealt with in the 1959 Year Book, pp. 1130-1131). If the amount of \$5,800,000,000 for this financing were added to the 1958 figures, the grand total for that year would be \$17,170,000,000, thus placing it in a completely unique classification.

Exclusive of refunding and short-term financing, there were several significant trends in new bond sales for the year 1959. While Federal Government financing held up, declines of varying degrees took place in all other classifications, reversing the increases previously shown in new provincial, municipal and corporation issues. Particularly in the corporation field, there was a very marked decline during 1959 with financing only a little more than one-half the total for 1958 and one-third the peak in 1957.

Excluding all refunding and new issues with a term to maturity of less than one year, new offerings of Federal Government issues totalled \$2,775,165,950 in 1959, compared with \$2,624,534,050 in 1958 and \$2,468,792,850 in 1957. Besides Canada Savings Bonds, Series 14, the 1959 federal total included a \$200,000,000 issue in February, a \$200,000,000 issue in June, and three issues for a total of \$510,000,000 in September; also issued in September was an additional \$40,000,000 with a maturity of less than one year. In addition, the Federal Government guaranteed an issue for \$150,000,000 in May 1959 and another for \$300,000,000 in November. Both were guaranteed on behalf of the Canadian National Railways.

* Prepared by E. C. Gould, Financial Editor, *The Monetary Times*.

A very considerable amount of new capital was acquired by the Federal Government in 1959 through public subscription to Canada Savings Bonds, Series 14. This issue, calculated to the year-end, reached a record of \$1,415,000,000. There were 660,500 applications for \$219,000,000 on the Payroll Savings Plan and 737,000 applications for \$1,196,000,000 by the general public, which classification included chartered banks, investment dealers, trust and loan companies, and other savings institutions. Several new features added to the attractiveness of the issue for investors. There was a higher yield at 4.98 p.c., including a 3-p.c. non-taxable premium of principal amount which will be paid at maturity in 1968. For the first time, Savings Bonds could be registered directly for estates or in the names of trustees or administrators. The Series had a limit of \$20,000 for each individual purchase, raised from \$10,000 in 1958 and 1957. Other limits have been \$5,000 for the issues of 1951 to 1956, \$1,000 for the issues of 1947 to 1950, and \$2,000 for the first issue in 1946.

6.—Sales of Canada Savings Loans, 1946-59

NOTE.—Figures for the issues 1946-58 are for the entire loans, i.e., either to the year-end or to the closing date within the year or in the subsequent year. The figure for Series 14 (1959) is to Dec. 31, 1959.

Series	Applications	Limits per Individual	Total Sales
	No.	\$	\$
Series 1, 1946.....	1,248,444	2,000	535,285,550
Series 2, 1947.....	910,742	1,000	287,733,100
Series 3, 1948.....	862,686	1,000	260,491,150
Series 4, 1949.....	1,015,579	1,000	320,200,000
Series 5, 1950.....	963,048	1,000	285,600,000
Series 6, 1951.....	986,900	5,000	394,642,400
Series 7, 1952.....	982,274	5,000	380,761,100
Series 8, 1953.....	1,287,506	5,000	850,548,900
Series 9, 1954.....	1,175,264	5,000	800,540,900
Series 10, 1955.....	1,180,000	5,000	729,100,000
Series 11, 1956.....	1,242,250	5,000	853,810,150
Series 12, 1957.....	1,293,163 [±]	10,000	1,216,711,900 [±]
Series 13, 1958.....	1,179,198 [±]	10,000	923,697,450 [±]
Series 14, 1959.....	1,397,500	20,000	1,415,165,950

In contrast to Federal Government financing, all other classes of security issues placed in 1959 showed declines from the previous year, some moderately but others markedly down. Direct financing by the provinces, for example, showed only a minor decrease as compared with 1958 but the issues guaranteed by the provinces experienced a considerably greater decline than did direct issues. As a result, the combined total of direct and guaranteed provincial financing was off by over \$100,000,000.

In the category of combined direct and guaranteed provincial financing, the total for 1959 was \$653,001,875, compared with \$791,271,000 in 1958. Of the 1959 total, \$277,180,000 was for direct provincial government financing and the remainder represented provincial guarantees for utility, municipal, and parochial purposes. Of the comparable total in 1958, \$290,800,000 represented direct provincial financing and \$500,471,000 was of a guaranteed nature.

Provincial entries into the bond market in 1959 were:—

<i>Province</i>	<i>Month</i>	<i>Amount</i>	<i>Province</i>	<i>Month</i>	<i>Amount</i>
		\$			\$
New Brunswick.....	January.....	6,500,000	Prince Edward Island..	October.....	4,000,000
Newfoundland.....	January.....	4,600,000	Ontario.....	October.....	50,000,000
Ontario.....	January.....	75,000,000	Newfoundland.....	October.....	4,000,000
Prince Edward Island..	January.....	1,500,000	Prince Edward Island..	November..	1,600,000
Nova Scotia.....	January.....	12,000,000	Manitoba.....	November..	10,000,000
Saskatchewan.....	January.....	8,000,000	New Brunswick.....	December...	5,580,000
Prince Edward Island..	April.....	1,500,000	Nova Scotia.....	December...	8,500,000
Ontario.....	July.....	50,000,000			
Saskatchewan.....	August.....	15,000,000	TOTAL, 1959.....		277,180,000
Manitoba.....	October.....	20,000,000			

In the field of direct municipal financing (exclusive of municipal issues guaranteed by various provinces) the market for new flotations was down from \$401,426,925 in 1958 to \$351,009,264 in 1959. On the other hand, loans for parochial or educational and miscellaneous purposes experienced some increase. Classified independently of other municipal financing, they were up from a total of \$62,081,000 in 1958 to \$73,804,100 in 1959. This increase, however, was not sufficiently great to offset a decline in the combined totals. Municipalities of Vancouver, Regina, Winnipeg, Hamilton, Toronto, Montreal and Ottawa were the largest municipal borrowers during 1959.

New corporation bond sales declined drastically in 1959 to \$369,025,000 from a record total of \$1,024,604,100 in 1957 and from \$729,225,000 in 1958. The general slow-down of business activity which began towards the end of 1957 and continued through 1958 and 1959 was reflected in the number and amount of new corporation issues placed. Of note was an increase of special features such as attached stock purchase warrants, share bonuses, rights of various kinds, and offerings in units with common shares. These measures were intended to make new issues more attractive for investors in view of an indifferent market.

The largest issues for new corporation borrowing in the domestic bond market during 1959 included two flotations of \$30,000,000 and \$40,000,000 by the British Columbia Electric Company Limited, a \$25,000,000 flotation by Irving Refinery Limited, \$17,000,000 by BP Refinery Canada Limited, \$20,000,000 by Simpsons-Sears Acceptance Company Limited, \$35,000,000 by The Bell Telephone Company of Canada, and \$20,000,000 by Dominion Foundries and Steel Limited. New corporate money borrowed in the United States during 1959 included \$4,000,000 by Thorncliffe Park Limited, \$20,000,000 by Canadian Acceptance Corporation, \$4,000,000 by Laurentide Acceptance Corporation Limited, \$4,500,000 by Provo Gas Producers, and \$5,000,000 by Simpsons-Sears Acceptance Company Limited.

During 1959, the total of all new Canadian bond sales in the United States amounted to \$472,856,431, compared with \$486,950,621 in 1958 and \$606,876,100 in 1957. Of the 1959 total, \$310,200,000 was for direct and guaranteed provincial issues, compared with \$195,000,000 in 1958 and \$122,000,000 in 1957. Of the municipal issues, the amount sold in the United States in 1959 was \$112,356,431 compared with \$175,300,621 in 1958 and \$94,818,800 in 1957. In keeping with the marked over-all decline, only \$50,300,000 in corporation financing was placed on the United States market in 1959, compared with \$116,650,000 in 1958 and \$390,057,300 in 1957.

The above analysis shows that during 1959 the bond market was preoccupied with the needs of Federal Government finance. However, since then there have been indications of a shift of emphasis back to other forms of security financing. Information available for the first six months of 1960 shows increases in provincial, municipal and corporation issues over the same period of 1959; provincial and municipal issues also compared favourably with the totals for 1958 and 1957 but, while sales of new corporation issues for the first half of 1960 were higher than those for the same period of 1959, they were still well below comparable figures for 1958 and far below those of 1957.

7.—Sales of Canadian Bonds, by Class of Bond and Country of Sale, 1950-59

(SOURCE: *The Monetary Times*)

NOTE.—Figures from 1904 are given in the corresponding table of previous Year Books beginning with the 1933 edition.

Year	CLASS OF BOND					
	Federal ¹	Provincial	Municipal	Parochial and Miscellaneous	Corporation	Total
	\$	\$	\$	\$	\$	\$
1950.....	2,167,600,000	373,824,500	150,369,281	30,466,369	431,180,303	3,153,440,453
1951.....	594,842,400	369,532,000	196,438,016	37,987,921	451,630,000	1,650,211,237
1952.....	830,761,100	426,973,000	147,690,940	49,264,100	573,539,000	2,028,228,140
1953.....	1,950,548,900	436,616,900	186,784,460	35,242,605	336,295,800	2,945,488,665
1954.....	3,200,540,900	400,916,000	209,640,778	51,352,886	606,532,800	4,468,983,364
1955.....	1,348,500,000	434,165,000	226,991,573	66,063,850	585,795,900	2,661,516,323
1956.....	1,357,000,000	557,888,000	265,936,167	52,661,700	860,184,400	3,093,670,267
1957.....	2,408,792,850	645,959,500	305,726,988	49,966,700	1,024,604,100	4,495,050,138
1958.....	2,624,534,050	791,271,000	401,426,925	62,081,000	729,255,000	4,608,567,975
1959.....	2,775,165,950	653,001,875	351,009,264	73,804,100	369,025,000	4,222,006,189

Year	COUNTRY OF SALE		
	Canada ¹	United States	Total
	\$	\$	\$
1950.....	2,980,740,453	172,700,000	3,153,440,453
1951.....	1,266,188,237	384,023,000	1,650,211,237
1952.....	1,743,578,115	284,650,025	2,028,228,140
1953.....	2,638,889,450	306,599,215	2,945,488,665
1954.....	4,295,385,364	173,598,000	4,468,983,364
1955.....	2,506,953,323	154,563,000	2,661,516,323
1956.....	2,623,137,285	470,532,982	3,093,670,267
1957.....	3,888,174,038	606,876,100	4,495,050,138
1958.....	4,121,617,354	486,950,621	4,608,567,975
1959.....	3,749,149,758	472,856,431	4,222,006,189

¹ Excludes treasury bills, deposit certificates and other financing for a term of less than one year and the Canada Conversion Loan of 1958.

CHAPTER XXV.—INSURANCE*

CONSPECTUS

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NOTE.—The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

Insurance, for the purpose of statistical analysis, is usually classified as life, fire and casualty. Most companies operate under Federal Government registration although some have provincial licences only. Also many fraternal orders and societies are engaged in this kind of business. The special articles relating to insurance that have appeared in previous editions of the Year Book are listed in Part II of Chapter XXVII under the heading "Insurance".

Section 1.—Life Insurance†

Life insurance in force in Canada with companies registered by the Federal Government (exclusive of fraternal benefit societies) amounted to over \$36,496,000,000 at the end of 1958, an increase of \$3,409,000,000 during the year. The ratio of gain in business in force expressed as a percentage of the amount in force at the beginning of the same year, which had hovered around 10 p.c. each year during the decade ended in 1955, increased to 14.3 p.c. in 1956 but fell back slightly to 13.8 p.c. in 1957 and to 10.3 p.c. in 1958.

* Material in this Chapter, except as otherwise indicated, has been prepared under the direction of the Superintendent of Insurance for Canada, Ottawa. More detailed data are available in the Annual Reports of the Department of Insurance.

† All the amounts given in the tables of this Section are net amounts after deduction of reinsurance ceded.

Year	In Force at Beginning of Year	Increase in Force for the Year	Per- centage Gain
	\$	\$	
1930.....	6,157,000,000	335,000,000	5.4
1935.....	6,221,000,000	38,000,000	0.6
1940.....	6,776,000,000	200,000,000	2.9
1945.....	9,140,000,000	612,000,000	6.7
1950.....	14,409,000,000	1,337,000,000	9.3
1951.....	15,746,000,000	1,490,000,000	9.5
1952.....	17,236,000,000	1,855,000,000	10.8
1953.....	19,091,000,000	2,136,000,000	11.2
1954.....	21,227,000,000	1,908,000,000	9.0
1955.....	23,135,000,000	2,317,000,000	10.0
1956.....	25,452,000,000	3,635,000,000	14.3
1957.....	29,087,000,000	4,000,000,000	13.8
1958.....	33,087,000,000	3,409,000,000	10.3

Subsection 1.—Summary of Life Insurance in Canada

Tables 1 and 2 summarize insurance premiums, claims, amounts of new policies effected, and amounts of insurance in force on Dec. 31 for the years 1957 and 1958. These data are presented in Table 1 on the basis of the supervising government authorities for the companies and societies concerned, and the same data are presented in Table 2 classified on the basis of nationality of company or society and by supervising government authorities.

1.—Summary of Life Insurance in Canada according to Supervising Government Authority, 1957 and 1958

Business Transacted by—	Insurance Premiums	Claims ¹	New Policies Effected	Insurance in Force, Dec. 31
	\$	\$	\$	\$
1957				
Federally Registered.....	614,934,866	204,803,268	5,015,721,757	33,527,987,568
Companies.....	607,110,740	200,669,872	4,936,358,903	33,087,056,501
Societies.....	7,824,126	4,133,396	79,362,854	440,931,067
Provincially Licensed Only.....	38,466,850	12,577,321	410,612,118	2,106,173,517
Within Province of Incorporation—				
Companies.....	26,686,647	7,628,558	297,153,517	1,550,485,456
Societies.....	5,349,549	2,340,575	40,783,463	246,252,674
Outside Province of Incorporation—				
Companies.....	3,921,818	1,006,133	45,015,354	182,345,276
Societies.....	2,508,836	1,602,055	27,059,784	127,090,111
Totals, 1957.....	653,401,716	217,380,589	5,425,733,875	35,634,161,085
1958				
Federally Registered.....	658,171,543	216,367,786	5,247,936,531	37,077,183,968
Companies.....	648,513,585	211,917,773	5,129,714,126	36,495,778,685
Societies.....	9,657,958	4,450,013	118,222,405	581,407,283
Provincially Licensed Only.....	41,080,135	13,614,911	456,822,971	2,355,328,564
Within Province of Incorporation—				
Companies.....	31,450,463	9,453,087	367,163,261	1,905,139,231
Societies.....	2,710,608	1,530,564	16,154,136	114,520,000
Outside Province of Incorporation—				
Companies.....	4,369,396	1,078,481	49,176,873	208,756,897
Societies.....	2,549,668	1,552,779	24,328,701	126,912,436
Totals, 1958.....	699,251,678	229,982,697	5,704,759,502	39,432,514,532

¹ Death, disability and maturity of insurance and annuity contracts; for fraternal benefit societies, annuity contracts do not apply for 1957.

2.—Summary of Life Insurance in Canada, by Nationality of Company or Society, 1957 and 1958

Business Transacted by—	Insurance Premiums	Claims ¹	New Policies Effectuated	Insurance in Force, Dec. 31
1957	\$	\$	\$	\$
Canadian Companies—				
Federally registered.....	405,518,078	133,194,500	3,037,487,837	22,262,730,280
Provincially licensed only.....	30,608,465	8,634,691	342,168,871	1,732,830,732
Canadian Societies—				
Federally registered.....	3,869,231	2,409,982	53,371,945	263,477,451
Provincially licensed only.....	7,858,385	3,942,630	67,843,247	373,342,785
British Companies—				
Federally registered.....	21,368,630	5,147,924	226,584,627	994,762,620
Foreign Companies—				
Federally registered.....	180,224,032	62,327,448	1,672,286,439	9,829,563,601
Foreign Societies—				
Federally registered.....	3,954,895	1,723,414	25,990,909	177,453,616
Totals, 1957.....	653,401,716	217,380,589	5,425,733,875	35,634,161,085
1958				
Canadian Companies—				
Federally registered.....	432,683,366	141,248,140	3,345,151,460	24,560,264,322
Provincially licensed only.....	35,819,859	10,531,568	416,340,134	2,113,896,128
Canadian Societies—				
Federally registered.....	4,979,817	2,544,443	89,161,447	375,672,122
Provincially licensed only.....	5,260,276	3,083,343	40,482,837	241,432,436
British Companies—				
Federally registered.....	24,409,973	5,126,582	224,776,123	1,170,343,106
Foreign Companies—				
Federally registered.....	191,420,246	65,543,051	1,559,786,543	10,765,171,257
Foreign Societies—				
Federally registered.....	4,678,141	1,905,570	29,060,958	205,735,161
Totals, 1958.....	699,251,678	229,982,697	5,704,759,502	39,432,514,532

¹ Death, disability and maturity of insurance and annuity contracts; for fraternal benefit societies annuity contracts for 1957 do not apply.

Subsection 2.—Operational Statistics for Life Insurance Transacted in Canada by Companies under Federal Registration

The amount of life insurance in force in Canada has shown an almost continuous advance year by year since the beginning of the record in 1869. The amount per capita of the estimated population has more than doubled since the end of World War II—evidence of the general recognition of the value of life insurance for the adequate protection of dependants against misfortune. During 1958, life insurance business was transacted in Canada by 75 active companies having federal registration, including 32 Canadian, eight British and 35 foreign companies. There were also six British and three foreign companies that have indicated their intention of doing no new business in Canada. In addition, two foreign companies, one first registered in 1957 and the other in 1958, transacted no business in Canada during the year and one other foreign company ceased transacting business in Canada on Jan. 22, 1958.

The operations analysed in the tables of this Subsection, with the exception of Table 6, include only those companies under federal registration and are exclusive of fraternal organizations and provincial licensees. However, companies under federal registration account for about 93 p.c. of the life insurance in force in Canada.

3.—Life Insurance Effectuated and in Force in Canada by Companies under Federal Registration, Decennially 1880-1950 and Annually 1951-58

NOTE.—Figures for 1889-1900 are given in the 1938 Year Book, p. 958; for 1901-39 in the 1942 edition, p. 855; and for 1940-49 in the 1957-58 edition, p. 1168. Statistics of fraternal society insurance, excluded here, are given at pp. 1164-1165.

Year	New Insurance Effectuated during Year	Insurance in Force Dec. 31				Insurance in Force per Capita ¹
		Canadian Companies	British Companies	Foreign Companies	Total	
	\$	\$	\$	\$	\$	\$
1880.....	13,906,887	37,838,518	19,789,863	33,643,745	91,272,126	21.45
1890.....	39,802,956	135,213,990	31,613,730	81,591,847	248,424,567	51.98
1900.....	67,729,115	267,151,086	39,485,344	124,433,416	431,069,846	81.32
1910.....	150,785,305	565,667,110	47,816,775	242,629,174	856,113,059	122.51
1920.....	630,110,900	1,664,348,605	76,883,090	915,793,798	2,657,025,493	310.55
1930.....	884,749,748	4,319,370,209	117,410,860	2,055,502,125	6,492,283,194	636.00
1940.....	590,205,536	4,609,213,977	145,603,299	2,220,505,184	6,975,322,460	612.89
1950.....	1,798,864,211	10,756,249,942	342,878,530	4,646,707,595	15,745,836,067	1,148.33
1951.....	1,990,926,006	11,807,992,326	391,352,883	5,036,207,593	17,235,583,302	1,230.32
1952.....	2,287,264,465	13,085,349,418	443,275,711	5,562,003,368	19,090,628,497	1,322.98
1953.....	2,551,393,073	14,526,740,295	519,137,847	6,181,027,477	21,226,905,619	1,436.09
1954.....	2,656,722,341	15,765,916,390	596,756,619	6,771,905,859	23,134,578,868	1,513.35
1955.....	3,154,670,863	17,401,229,498	691,660,141	7,358,681,886	25,451,571,525	1,621.33
1956.....	4,119,767,664	19,783,194,985	819,968,279	8,484,252,879	29,087,416,143	1,808.81
1957.....	4,936,358,903	22,262,730,280	994,762,620	9,829,563,601	33,087,056,501	1,994.52
1958.....	5,129,714,126	24,660,264,322	1,170,343,106	10,765,171,257	36,495,778,685	2,140.77

¹ Based on official estimates of population given at p. 196.

4.—Summary of Life Insurance in Canada Transacted by Companies under Federal Registration, 1956-58

Item	1956	1957	1958
Canadian Companies—			
New policies effected during year.....No.	374,767	387,840	389,225
.....\$	2,697,441,456	3,037,487,537	3,345,151,460
Policies in force Dec. 31.....No.	4,733,923	4,843,653	4,942,324
.....\$	19,783,194,985	22,262,730,280	24,560,264,322
Policies ceased by death or maturity.....No.	40,829	46,167	46,432
.....\$	114,713,331	126,600,544	133,520,891
Insurance premiums.....\$	377,531,692	405,518,078	432,683,366
Claims incurred ¹\$	120,978,895	133,194,500	141,248,140
British Companies—			
New policies effected during year.....No.	24,428	31,202	27,592
.....\$	159,182,161	226,584,627	224,776,123
Policies in force Dec. 31.....No.	205,218	222,504	234,196
.....\$	819,968,279	994,762,620	1,170,343,106
Policies ceased by death or maturity.....No.	2,203	2,318	2,349
.....\$	4,572,232	4,417,361	4,458,013
Insurance premiums.....\$	19,759,474	21,368,630	24,409,973
Claims incurred ¹\$	5,066,155	5,147,924	5,126,582
Foreign Companies—			
New policies effected during year.....No.	352,504	331,946	308,971
.....\$	1,263,144,027	1,672,286,439	1,559,786,543
Policies in force Dec. 31.....No.	5,160,454	5,037,882	4,951,638
.....\$	8,484,252,879	9,829,563,601	10,765,171,257
Policies ceased by death or maturity.....No.	65,317	77,606	86,964
.....\$	50,861,990	57,912,389	64,443,831
Insurance premiums.....\$	167,432,268	180,224,032	191,420,246
Claims incurred ¹\$	54,806,973	62,327,448	65,543,051
All Companies—			
New policies effected during year.....No.	751,789	750,988	725,788
.....\$	4,119,767,664	4,936,358,903	5,129,714,126
Policies in force Dec. 31.....No.	10,099,595	10,104,039	10,128,158
.....\$	29,087,416,143	33,087,056,501	36,495,778,685
Policies ceased by death or maturity.....No.	108,349	126,091	135,745
.....\$	170,147,553	188,930,294	202,422,735
Insurance premiums.....\$	564,723,434	607,110,740	648,513,585
Claims incurred ¹\$	180,852,023	200,669,872	211,917,773

¹ Death, disability and maturity of insurance and annuity contracts.

5.—Ordinary and Industrial Life Insurance Policies Effectuated and in Force in Canada by Companies under Federal Registration, 1956-58

Year, Type of Policy and Nationality of Company	New Policies Effectuated			Policies in Force Dec. 31		
	No.	Amount	Average Amount per Policy	No.	Amount	Average Amount per Policy
1956		\$	\$		\$	\$
Ordinary Policies—						
Canadian.....	329,413	2,010,864,403	6,104	4,070,464	14,295,274,819	3,512
British.....	24,396	154,740,111	6,343	167,491	775,957,517	4,633
Foreign.....	274,157	916,533,176	3,343	2,132,126	4,786,009,610	2,245
Industrial Policies—						
Canadian.....	43,797	50,650,450	1,156	653,418	580,676,297	889
British.....	—	—	—	37,595	5,302,185	141
Foreign.....	74,527	34,628,743	465	3,017,999	1,081,932,330	358
1957						
Ordinary Policies—						
Canadian.....	343,380	2,277,740,846	6,633	4,191,564	15,780,032,194	3,765
British.....	31,142	207,359,637	6,659	186,989	931,418,618	4,981
Foreign.....	280,613	1,375,992,562	4,904	2,231,948	5,612,777,523	2,515
Industrial Policies—						
Canadian.....	42,693	50,888,306	1,192	640,983	583,214,543	910
British.....	—	—	—	35,333	4,892,496	138
Foreign.....	47,433	21,983,748	463	2,792,828	1,011,294,853	362
1958						
Ordinary Policies—						
Canadian.....	346,191	2,489,780,234	7,192	4,300,816	17,201,843,900	4,000
British.....	27,520	208,059,981	7,560	200,738	1,076,412,792	5,362
Foreign.....	258,655	1,258,245,565	4,865	2,332,816	6,270,470,632	2,688
Industrial Policies—						
Canadian.....	41,333	49,599,902	1,200	629,510	584,765,479	929
British.....	—	—	—	35,228	4,474,557	135
Foreign.....	45,698	21,411,929	469	2,603,677	954,101,714	366

6.—Group Life Insurance Effectuated and in Force in Canada by Companies under Federal Registration, 1956-58

Year and Nationality of Company	Effectuated		In Force Dec. 31			
	Policies	Amount	Policies	Certificates	Amount	Average Amount per Certificate
1956	No.	\$	No.	No.	\$	\$
Canadian.....	1,557	635,926,603	10,041	4,146,649	4,907,243,869	1,183
British.....	32	4,442,070	132	11,865	38,708,577	3,262
Foreign.....	3,910	311,982,108	10,329	2,068,870	2,616,310,939	1,265
1957						
Canadian.....	1,767	708,858,685	11,106	5,415,995	5,899,483,543	1,069
British.....	60	19,224,990	182	15,794	58,451,506	3,701
Foreign.....	3,900	274,310,129	13,106	2,317,711	3,205,491,225	1,383
1958						
Canadian.....	1,701	805,771,324	11,998	5,677,800	6,773,654,943	1,193
British.....	72	16,716,142	280	19,329	89,455,757	4,628
Foreign.....	4,618	280,129,049	15,145	2,314,709	3,540,598,911	1,530

7.—Insurance Death Rates in Canada, 1956-58

Type of Insurer	1956			1957			1958		
	Policies Exposed to Risk	Policies Terminated by Death	Death Rate per 1,000	Policies Exposed to Risk	Policies Terminated by Death	Death Rate per 1,000	Policies Exposed to Risk	Policies Terminated by Death	Death Rate per 1,000
	No.	No.		No.	No.		No.	No.	
All companies, ordinary.....	6,228,005	32,531	5.2	6,507,447	34,312	5.3	6,740,661	36,450	5.4
All companies, industrial.....	3,799,191	30,895	8.1	3,604,410	30,665	8.5	3,384,562	33,565	9.9
Fraternal benefit societies.....	371,406	3,994	10.8	387,755	4,097	10.6	500,142	4,252	8.5
Totals.....	10,398,602	67,420	6.5	10,499,612	69,074	6.6	10,625,365	74,267	7.0

Subsection 3.—Finances of Companies Transacting Life Insurance under Federal Registration

The financial statistics in Tables 8 and 9 relate only to life insurance transacted by companies under federal registration. The figures for British and foreign companies apply to their assets, liabilities and operations in Canada only. On the other hand, the assets and liabilities, revenue and expenditure of Canadian companies are given for total business, including business arising out of Canada as well as in Canada.

8.—Total Assets and Liabilities for Life Insurance of Canadian Companies under Federal Registration and Assets and Liabilities in Canada for Life Insurance of British and Foreign Companies under Federal Registration, 1956-58.

Assets and Liabilities	1956	1957	1958
Canadian Companies	\$	\$	\$
Total Assets ¹.....	6,669,605,421	7,163,924,642	7,583,162,563
Bonds.....	3,382,818,042	3,528,395,387	3,700,885,731
Stocks.....	355,444,914	354,571,408	367,587,149
Mortgage loans on real estate.....	2,228,944,199	2,432,230,118	2,609,040,713
Agreements of sale of real estate.....	5,674,120	5,352,872	5,076,560
Real estate.....	185,787,700	227,651,658	254,748,709
Collateral loans.....	54,711	56,752	2
Policy loans.....	320,413,469	352,057,583	369,961,497
Cash.....	64,047,524	66,668,934	79,671,736
Investment income, due and accrued.....	59,609,374	65,126,851	71,232,841
Outstanding insurance premiums and annuity considerations.....	56,435,022	61,934,972	64,536,138
Shares of company's capital stock (purchased under mutualization plan).....	—	—	46,721,060
Other assets.....	10,376,346	9,878,107	13,700,429
Total Liabilities.....	6,285,301,743	6,687,122,935	7,130,219,806
Actuarial reserve for contracts in force.....	5,277,270,480	5,603,059,980	5,979,494,193
Amounts on deposit pertaining to contracts.....	544,346,054	559,141,650	590,890,429
Outstanding claims under contracts.....	54,504,703	58,513,401	60,410,411
Other liabilities.....	409,180,506	466,407,904	499,424,773
Surplus.....	370,620,688	402,970,112	438,012,242
Capital stock paid up.....	13,682,990	13,831,595	14,930,515
British Companies			
Assets in Canada².....	284,339,559	317,544,069	374,366,300
Bonds.....	161,069,833	182,130,139	211,628,506
Stocks.....	49,650,673	45,993,074	59,957,983
Mortgage loans on real estate.....	59,066,079	71,757,978	80,041,848
Real estate.....	3,823,933	5,190,771	6,037,469
Collateral loans.....	—	30,672	2
Policy loans.....	5,569,502	6,688,440	7,303,412

For footnotes, see end of table.

8.—Total Assets and Liabilities for Life Insurance of Canadian Companies under Federal Registration and Assets and Liabilities in Canada for Life Insurance of British and Foreign Companies under Federal Registration, 1956-58—concluded.

Assets and Liabilities	1956	1957	1958
	\$	\$	\$
British Companies—concluded			
Assets in Canada¹—concluded			
Cash.....	2,776,569	2,910,756	2,727,569
Investment income, due and accrued.....	939,666	1,096,811	1,316,267
Outstanding insurance premiums and annuity considerations..	1,295,972	1,650,513	1,957,702
Other assets.....	147,332	94,915	3,395,544
Liabilities in Canada.....	258,508,138	293,441,989	335,191,504
Actuarial reserve for contracts in force.....	252,810,542	287,488,068	329,761,180
Outstanding claims under contracts.....	2,203,921	2,302,243	1,566,622
Other liabilities.....	3,493,675	3,651,678	3,863,702
Excess of assets over liabilities in Canada.....	25,831,421	24,102,080	39,174,796
Foreign Companies			
Assets in Canada¹.....	1,248,135,204	1,391,762,031	1,432,822,001
Bonds.....	919,065,711	990,184,385	1,008,282,918
Stocks.....	1,920,000	1,680,000	1,800,000
Mortgage loans on real estate.....	232,349,015	298,158,216	311,457,795
Real estate.....	2,967,693	4,435,263	6,061,352
Policy loans.....	61,803,000	64,796,890	66,617,512
Cash.....	10,752,445	10,857,798	15,321,412
Investment income, due and accrued.....	13,430,502	15,019,272	16,199,473
Outstanding insurance premiums and annuity considerations..	5,714,077	6,338,063	6,854,689
Other assets.....	132,761	292,144	226,850
Liabilities in Canada.....	1,203,509,722	1,252,547,731	1,313,116,206
Actuarial reserve for contracts in force.....	1,109,151,162	1,155,039,935	1,208,408,136
Outstanding claims under contracts.....	9,568,572	10,025,842	13,117,132
Other liabilities.....	84,789,988	87,481,954	91,590,938
Excess of assets over liabilities in Canada.....	44,625,482	139,214,300	119,705,795

¹ At book values. The liabilities include a reserve equal to the amount, if any, by which the total book value of bonds, stocks and real estate exceeds the total market value (or amortized value where applicable). ² Included with other assets. ³ At market values.

9.—Total Revenue and Expenditure for Life Insurance Transacted by Canadian Companies under Federal Registration and Revenue and Expenditure in Canada for Life Insurance Transacted by British and Foreign Companies under Federal Registration, 1956-58.

Revenue and Expenditure	1956	1957	1958
	\$	\$	\$
Canadian Companies			
Total Revenue.....	1,056,775,813	1,144,998,110	1,235,561,691
Insurance premiums and annuity considerations.....	758,619,224	813,269,328	875,413,883
Investment income.....	270,454,649	301,124,391	330,305,292
Sundry items.....	27,701,940	30,604,391	29,842,516
Total Expenditure.....	1,002,652,421	1,083,928,186	1,161,389,411
Claims incurred.....	349,072,338	392,853,193	411,294,197
Normal increase in actuarial reserve.....	328,052,231	333,260,705	380,854,198
Taxes, licences and fees.....	20,260,986	21,794,814	23,803,637
Commissions and general expenses.....	164,929,268	181,491,681	194,798,308
Sundry items.....	50,745,716	55,712,245	44,233,079
Dividends to policyholders.....	81,178,919	89,973,796	97,816,352
Increase in provision for profits to policyholders.....	8,412,963	8,841,752	8,690,640
Analysis of Increase in Surplus—			
Excess of revenue over expenditure.....	54,123,392	61,069,924	74,172,280
Net capital gain on investments.....	5,708,517	4,798,409	8,047,616
Other credits to surplus (net).....	-1,811,073	2,127,755	-23,213,832 ¹
Net increase in special reserves or funds.....	-13,755,598	-28,860,665	-20,995,405
Special increase in actuarial reserve.....	-10,904,848	-3,259,569	518,441
Dividends to shareholders.....	-3,403,835	-3,507,576	-3,475,198 ²
Increase in surplus (policyholders and shareholders).....	29,956,555	32,368,280	35,053,902

9.—Total Revenue and Expenditure for Life Insurance Transacted by Canadian Companies under Federal Registration and Revenue and Expenditure in Canada for Life Insurance Transacted by British and Foreign Companies under Federal Registration, 1956-58—concluded.

Revenue and Expenditure	1956	1957	1958
	\$	\$	\$
British Companies			
Revenue in Canada.....	53,304,361	62,466,080	72,328,769
Insurance premiums and annuity considerations.....	46,651,341	48,692,259	55,675,767
Investment income.....	11,043,121	13,165,407	15,286,673
Sundry items.....	609,899	608,414	1,366,329
Expenditure in Canada.....	27,410,445	28,758,047	31,757,240
Claims incurred.....	14,396,371	14,789,551	16,128,458
Taxes, licences and fees.....	439,636	508,811	559,422
Commissions and general expenses.....	8,330,419	10,330,293	11,163,005
Other expenditure.....	766,102	660,137	925,034
Dividends to policyholders.....	3,477,917	2,469,255	2,981,321
Foreign Companies			
Revenue in Canada.....	235,823,146	257,743,120	274,161,505
Insurance premiums and annuity considerations.....	176,614,651	191,044,136	200,691,286
Investment income.....	49,989,480	57,021,447	62,010,010
Sundry items.....	9,219,015	9,677,537	11,460,209 ^a
Expenditure in Canada.....	164,341,693	195,961,765	198,137,546
Claims incurred.....	81,958,540	100,887,924	100,177,803
Taxes, licences and fees.....	4,175,255	5,037,039	5,560,088
Commissions and general expenses.....	45,013,227	52,386,589	55,108,125
Other expenditure.....	8,615,035	10,659,246	10,026,174
Dividends to policyholders.....	24,579,636	26,090,967	27,265,356

¹ Includes amounts written off shares purchased under mutualization plan. than those purchased by the company under the mutualization plan.

² Dividends on shares other

Subsection 4.—Life Insurance Effected through Fraternal Benefit Societies

In addition to life insurance, some fraternal benefit societies grant other insurance benefits to members, notably sickness benefits, but these are relatively unimportant. Table 10 gives statistics of life insurance effected through fraternal benefit societies by Canadian members and Table 11 shows statistics of assets, liabilities, income and expenditure relating to all business of Canadian societies and to the business in Canada of foreign societies. The rates charged by these societies are computed to be sufficient to provide the benefits granted, having regard for actuarial principles. The benefit funds of each society must be valued annually by a qualified actuary (Fellow, by examination, of the Institute of Actuaries of Great Britain, of the Faculty of Actuaries in Scotland, or of the Society of Actuaries) and a readjustment of rates or benefits must be made, unless the actuary certifies to the solvency of each fund. The first sections of Tables 10 and 11 relate to the 16 Canadian societies registered by the federal Department of Insurance, only one of which does not grant life insurance benefits.

Under an amendment to the Insurance Act, effective Jan. 1, 1920, all foreign fraternal benefit societies were required to obtain authority from the Federal Government prior to transacting business in Canada. However, any such societies which at that date were transacting business under provincial licences, though forbidden to accept new members, were permitted to continue all necessary transactions in respect of insurance already in force. Most of these societies and some foreign societies that had not previously been licensed by the provinces have since obtained federal authority to transact business. During 1958, 31 foreign fraternal benefit societies transacted business in Canada; two of these societies do not grant life insurance benefits.

10.—Summary of Life Insurance in Canada Transacted by Fraternal Benefit Societies under Federal Registration, 1956-58

Item	1956	1957	1958
Canadian Societies			
Premiums.....	\$ 3,420,452	3,869,231	4,979,817
Claims incurred.....	\$ 3,421,129	3,557,022	3,786,652 ¹
New certificates effected.....	No. 26,157	27,590	46,543
Certificates in force Dec. 31.....	\$ 46,481,330	53,371,945	89,161,447
	No. 224,187	231,657	322,253
Certificates ceased by death or maturity.....	\$ 238,087,472	263,477,451	375,672,122
	No. 3,066	2,994	2,888
	\$ 2,544,066	2,480,924	2,366,139
Foreign Societies			
Premiums.....	\$ 3,735,058	3,954,895	4,678,141
Claims incurred.....	\$ 2,631,055	2,911,222	2,805,659 ¹
New certificates effected.....	No. 9,517	9,972	11,888
Certificates in force Dec. 31.....	\$ 21,153,609	25,990,909	29,060,958
	No. 124,758	131,874	154,507
Certificates ceased by death or maturity.....	\$ 161,188,548	177,453,616	205,735,161
	No. 1,447	1,517	1,731
	\$ 1,534,103	1,655,135	1,837,312

¹ Exclusive of dividends, separated from claims incurred in 1958.

11.—Financial Statistics for Fraternal Benefit Societies under Federal Registration, 1958

NOTE.—Because of changes in classification, certain items in this table are not comparable with those for previous years; figures are therefore given for one year only.

Item	Amount	Item	Amount
	\$		\$
Canadian Societies¹		Analysis of Increase in Surplus—	
Assets.....	135,650,763	Excess of revenue over expenditure.....	1,183,283
Bonds.....	97,117,799	Net capital gain on investments.....	615,319
Stocks.....	8,153,815	Other credits to surplus (net).....	—1,508
Mortgage loans on real estate.....	14,684,835	Net increase in special reserves.....	—475,163
Agreements of sale of real estate.....	986,324	Increase in surplus.....	1,321,931
Real estate.....	3,865,684		
Certificate loans and liens.....	4,848,735		
Cash.....	2,874,270		
Investment income, due and accrued.....	1,045,671		
Outstanding premiums, contributions and dues.....	1,632,955		
Other.....	440,675		
Liabilities.....	135,650,763	Foreign Societies²	
Actuarial reserve.....	102,990,861	Assets.....	49,836,412
Outstanding claims.....	967,559	Bonds.....	41,240,955
Amounts on deposit.....	129,930	Mortgage loans on real estate.....	2,383,805
Other.....	18,283,398	Real estate.....	952,595
Surplus.....	13,279,015	Certificate loans and liens.....	3,016,731
		Cash.....	1,267,881
Revenue.....	25,952,867	Investment income, due and accrued.....	550,613
Premiums, contributions and dues.....	19,538,727	Outstanding premiums, contributions and dues.....	423,832
Investment income.....	5,550,898	Liabilities.....	41,942,353
Other.....	816,242	Actuarial reserve.....	37,538,961
		Outstanding claims.....	759,078
Expenditure.....	24,769,584	Other.....	3,644,344
Claims incurred.....	7,141,443	Revenue.....	9,746,801
Increase in actuarial reserve.....	6,273,589	Premiums, contributions and dues.....	7,462,418
Taxes, licences and fees.....	88,642	Investment income.....	1,872,359
Commissions.....	4,459,995	Other.....	412,024
General expenses.....	4,582,090	Expenditure.....	5,774,481
Other.....	851,174	Claims incurred.....	3,736,807
Dividends to members.....	1,068,628	Taxes, licences and fees.....	36,779
Increase in provision for profits to policy-holders.....	304,023	Commissions.....	729,738
		General expenses.....	494,275
		Other.....	305,204
		Dividends to members.....	471,678

¹ All funds, business in and out of Canada.

² All funds, business in Canada only.

Subsection 5.—Life Insurance Effectuated and in Force Outside Canada by Canadian Companies under Federal Registration

In this Subsection, there are given for the years 1956 and 1957 summary statistics of insurance effectuated and insurance in force at the end of the year in currencies other than Canadian dollars, as written by Canadian companies under federal registration. The statistics for individual companies are shown in Table 12 and for individual currencies in Table 13. The data given in both of these tables are in terms of Canadian dollars, the conversions from the various foreign currencies having been made at the book rates of exchange used by the various companies. Although these book rates of exchange do not follow the day-to-day fluctuations in the current rates of exchange, they are adjusted when necessary to keep them reasonably in line with the current rates.

Canadian life insurance companies operating under federal registration at Dec. 31, 1957, had life insurance in force amounting to \$9,515,844,547 in countries outside Canada. Insurance in force in currencies other than Canadian dollars amounted to \$9,462,657,264; the difference between these figures is presumably the net amount of business in countries outside Canada transacted in Canadian currency. The business in force in Canada of Canadian companies registered by the Federal Government amounted to \$22,262,730,280 at Dec. 31, 1957, and the total business on the books of these companies, in and out of Canada, amounted to \$31,778,574,827. Thus, about 30 p.c. of the total business in force for Canadian companies registered by the Federal Government was in force in countries outside Canada.

In connection with their business outside Canada, the Canadian life insurance companies registered by the Federal Government held, at the end of 1957, Commonwealth and foreign investments in the amount of \$2,409,347,977.

12.—Life Insurance Effectuated and in Force for Canadian Companies (excluding Fraternal Societies) under Federal Registration, in Currencies other than Canadian Dollars, by Company, 1957 with Totals for 1956.

Year and Company	Insurance Effectuated			Insurance in Force Dec. 31		
	Common-wealth Currencies	Foreign Currencies	Total	Common-wealth Currencies	Foreign Currencies	Total
	\$	\$	\$	\$	\$	\$
Alliance Nationale ¹	—	—	—	—	3,275,454	3,275,454
Canada.....	37,611,084	100,766,916	138,378,000	234,108,718	570,829,713	804,938,431
Commercial.....	—	—	—	—	35,000	35,000
Confederation.....	24,335,852	57,127,625	81,463,477	197,372,367	337,580,911	534,953,278
Continental.....	—	—	—	—	96,414	96,414
Crown.....	14,874,496	123,418,787	138,293,283	72,360,732	608,182,273	680,543,005
Dominion.....	1,970,997	28,942,196	30,913,193	15,936,895	159,859,507	175,796,402
Dom. of Canada General	151,374	—	151,374	2,119,769	6,000	2,125,769
T. Eaton.....	—	—	—	235,580	3,333	238,913
Equitable.....	—	—	—	—	76,224	76,224
Great West.....	—	188,735,557	188,735,557	103,896	1,358,688,003	1,358,791,899
Imperial.....	24,004,576	3,682,943	27,687,519	121,185,734	43,338,623	164,524,357
London.....	—	1,300,687	1,300,687	—	8,313,410	8,313,410
Manufacturers.....	91,123,386	134,366,915	225,490,301	552,829,478	859,080,753	1,411,910,231
Maritime.....	138,000	—	138,000	1,569,515	48,430	1,617,945
Monarch.....	—	—	—	—	326,525	326,525
Montreal.....	—	—	—	145,652	262,543	408,195
Mutual.....	—	3,004,900	3,004,900	582,354	22,855,245	23,437,599
National.....	3,672,376	3,252,239	6,924,615	18,397,744	9,598,529	27,996,273
North American.....	8,123,442	47,009,890	55,133,332	32,052,432	202,678,552	234,730,984
Northern.....	—	3,943,378	3,943,378	40,717	26,018,489	26,059,206
Sauvegarde.....	—	—	—	—	5,000	5,000
Sun.....	168,152,172	266,728,125	434,880,297	1,081,934,478	2,920,391,851	4,002,326,329
Western.....	—	25,918	25,918	—	113,554	113,554
Totals, 1957.....	374,157,755	962,306,076	1,336,463,831	2,330,992,928	7,131,664,336	9,462,657,264
Totals, 1956.....	333,540,556	932,914,192	1,266,454,748	2,125,155,102	6,547,630,956	8,672,786,058

¹ Effective Jan. 1, 1958, the name was changed to Alliance Mutual Life Insurance Company.

Approximately 72 p.c. of all business in force in currencies other than Canadian is in United States currency and 17 p.c. is in sterling. From a slightly different point of view, approximately 25 p.c. of this business in force is in currencies of Commonwealth countries other than Canada, and 75 p.c. in currencies of foreign countries.

13.—Life Insurance Effectuated and in Force for Canadian Companies (excluding Fraternal Societies) under Federal Registration, in Currencies other than Canadian Dollars, by Currency, 1957.

Currency	Insurance Effectuated	Insurance in Force	Currency	Insurance Effectuated	Insurance in Force
\$	\$		\$	\$	
Commonwealth			Foreign Currencies.....	962,306,076	7,131,664,338
Currencies.....	374,157,755	2,330,992,928	Bahts (Thailand).....	—	94,843
Pounds—			Bolivars (Venezuela)....	2,219,501	31,543,704
Sterling.....	237,276,735	1,583,151,553	Cordobas (Nicaragua)....	—	6,125
Australia.....	—	28,447	Dollars (United States of America).....	916,698,364	6,768,342,995
British West Indies and			Francs (France).....	—	9,567
Bermuda.....	13,270,655	88,700,181	Francs (Switzerland)....	—	7,280
Rhodesia.....	16,061,793	44,380,218	Guilders (Netherlands)...	19,220	543,208
South Africa.....	65,232,375	367,417,819	Guilders (Netherlands Antilles).....	2,372,331	14,582,406
Dollars—			Kyats (Burma).....	—	278,494
British Honduras.....	3,500	730,942	Pesos (Argentina).....	220,841	10,625,626
British West Indies,			Pesos (Chile).....	—	361
Bermuda and British			Pesos (Colombia).....	542,562	27,360
Guiana.....	27,299,450	132,417,795	Pesos (Cuba).....	21,943,406	185,889,917
Hong Kong.....	1,147,049	11,379,669	Pesos (Dominican Republic).....	4,951,890	10,628,176
Malayan.....	4,394,465	28,225,034	Pesos (Mexico).....	618,747	7,841,186
Rupees—			Pesos (Philippines).....	9,928,550	69,080,019
Ceylon.....	5,416,705	39,550,121	Pounds (Egypt).....	—	19,702,803
India.....	—	7,667,008	Pounds (Israel).....	2,790,664	10,679,683
Pakistan.....	—	1,059,988	Rupiahs (Indonesia)....	—	1,622,845
Shillings—			Soles (Peru).....	—	156,427
East Africa.....	4,055,028	26,284,153	Yen (Japan).....	—	3,311
			Totals.....	1,336,463,831	9,462,657,264

Section 2.—Fire and Casualty Insurance

At the end of 1958, there were 291 companies registered by the Federal Government to transact fire insurance (84 Canadian, 87 British, and 120 foreign). Of that number, 282 companies (78 Canadian, 87 British and 117 foreign) were also registered to transact casualty insurance. Thus it may be seen that most companies registered by the Federal Government to transact fire insurance in Canada also transact casualty insurance.

At the end of 1958, there were 85 companies registered by the Federal Government to transact casualty insurance but not fire insurance (16 Canadian, 6 British, and 63 foreign).

The figures in the preceding two paragraphs include 54 companies that were also registered to transact life insurance, 11 of which were registered for fire, life and casualty insurance and 43 for life and casualty but not fire insurance.

It should be noted that, in addition to the companies registered by the Federal Government to transact casualty insurance, there were 23 registered fraternal benefit societies transacting accident and sickness insurance, of which 20 also transacted life insurance.

As shown in Table 14, some fire and casualty insurance is transacted in Canada by companies that are provincially licensed only. These companies generally confine their operations to the province of incorporation but may be allowed to sell insurance in other provinces. Many of them are mutual organizations transacting only fire insurance on a county, municipal or parish basis.

Table 14 summarizes net premiums written and net claims incurred for the years 1957 and 1958 in the fields of fire insurance and casualty insurance in Canada. These data are presented on the basis of the supervising government authorities for the companies concerned. The table relates only to insurance companies; no data are included with respect to fraternal benefit societies.

14.—Fire and Casualty Insurance Transacted in Canada, 1957 and 1958

Item	1957		1958	
	Net Premiums Written	Net Claims Incurred	Net Premiums Written	Net Claims Incurred
	\$	\$	\$	\$
Fire Insurance				
Federally registered companies.....	156,246,117	109,757,161	177,364,450	88,151,837
Provincial licensees.....	19,779,452	12,402,752	23,977,899	13,320,365
In province by which incorporated.....	18,532,188	11,438,077	21,746,886	11,845,086
Outside province by which incorporated.....	1,247,264	964,675	2,231,013	1,475,279
Lloyds, London.....	8,119,973	8,268,767	8,864,809	7,050,985
Totals, Fire.....	184,145,542	130,428,680	210,207,158	108,523,187
Casualty Insurance				
Federally registered companies.....	474,636,221	327,864,405	531,962,152	328,014,057
Provincial licensees.....	39,772,031	25,217,348	52,226,265	27,761,030
In province by which incorporated.....	34,768,279	21,800,276	45,910,111	24,616,511
Outside province by which incorporated.....	5,003,752	3,417,072	6,316,154	3,144,519
Lloyds, London.....	23,347,075	22,556,675	29,474,009	21,630,634
Totals, Casualty.....	537,755,327	375,638,428	613,662,426	377,405,721
Totals, Fire and Casualty.....	721,900,869	506,067,108	823,869,584	485,928,908

Subsection 1.—Fire Insurance Transacted in Canada by Companies under Federal Registration

The net premiums written have increased very rapidly in recent years, having more than doubled since 1947. The net claims incurred have kept pace with this increase in net premiums written.

15.—Fire Insurance Transacted in Canada by Companies under Federal Registration, 1947-58

Year	Net Premiums Written during Year	Net Claims Incurred during Year	Year	Net Premiums Written during Year	Net Claims Incurred during Year
	\$	\$		\$	\$
1947.....	86,774,952	39,513,014	1953.....	145,937,546	86,787,604
1948.....	98,191,514	45,143,505	1954.....	148,446,105	70,445,544
1949.....	103,955,183	46,567,188	1955.....	146,444,845	77,836,245
1950.....	115,648,449	53,524,685	1956.....	155,506,787	86,088,850
1951.....	134,496,218	52,086,541	1957.....	156,246,117	109,757,161
1952.....	139,777,732	61,124,918	1958.....	177,364,450	88,151,837

16.—Fire Insurance in Canada classified by Province and by Nationality of Company under Federal Registration, 1957 and 1958

(Registered reinsurance deducted)

Year and Province	Canadian Companies		British Companies		Foreign Companies	
	Net Premiums Written	Net Claims Incurred	Net Premiums Written	Net Claims Incurred	Net Premiums Written	Net Claims Incurred
	\$	\$	\$	\$	\$	\$
1957						
Newfoundland.....	421,231	735,784	1,077,434	4,716,295	356,507	1,086,202
Prince Edward Island.....	204,783	99,652	373,153	236,867	143,672	96,012
Nova Scotia.....	1,771,267	1,063,514	2,692,354	1,576,214	1,166,926	984,607
New Brunswick.....	1,455,422	841,163	2,369,178	1,212,414	1,266,837	1,133,427
Quebec.....	16,749,210	12,250,794	18,052,166	14,953,715	17,074,327	14,210,604
Ontario.....	20,656,597	11,973,515	20,816,555	12,580,742	20,589,275	16,403,084
Manitoba.....	3,489,053	2,070,970	2,546,278	1,223,009	2,148,203	1,152,965
Saskatchewan.....	3,208,591	1,152,958	1,411,677	411,539	1,715,578	710,611
Alberta.....	3,728,467	1,931,827	3,881,677	2,441,153	3,310,073	1,885,108
British Columbia.....	3,996,071	2,429,161	5,793,013	3,973,886	5,363,214	3,139,041
All other Canada ¹	233,686	—258,998	373,336	510,678	72,312	56,847
Canada, 1957.....	55,914,378	34,290,340	59,391,211	43,836,512	53,206,924	40,858,508
1958						
Newfoundland.....	473,060	264,325	1,383,415	509,436	450,316	166,041
Prince Edward Island.....	228,295	263,023	397,313	372,531	120,323	66,189
Nova Scotia.....	1,935,052	986,964	2,864,292	1,632,726	1,427,516	722,405
New Brunswick.....	1,591,345	686,508	2,560,625	1,296,056	1,271,429	568,835
Quebec.....	18,415,909	9,980,060	20,981,453	11,411,783	18,393,602	10,762,375
Ontario.....	24,444,244	12,227,183	24,050,936	11,394,429	24,515,361	11,812,251
Manitoba.....	3,834,821	1,460,265	2,735,645	1,177,625	2,326,784	1,172,263
Saskatchewan.....	3,425,482	1,356,950	1,662,980	771,420	1,615,949	855,634
Alberta.....	4,294,920	1,669,859	4,335,793	1,803,921	3,619,115	1,318,407
British Columbia.....	4,373,758	2,054,309	6,400,220	2,828,506	6,216,722	3,546,576
All other Canada ¹	123,397	61,517	462,758	138,462	198,649	71,687
Canada, 1958.....	63,140,313	30,990,963	67,835,430	33,336,895	60,155,766	31,062,663

¹ Includes the Yukon and Northwest Territories, also certain 'floaters' business that cannot be apportioned to any one province.

Subsection 2.—Fire Losses

The information in Tables 17 to 20, which deals with the loss of property and life caused by fire, has been summarized from the annual *Statistical Report of Fire Losses in Canada* prepared by the Dominion Fire Commissioner, Department of Public Works. Federal losses not included in these figures amounted to \$5,706,605 in 1958 from 2,424 fires.

17.—Statistics of Fire Losses, 1947-58

NOTE.—Figures for 1926-46 are given in the 1947 Year Book, p. 1078. Figures from 1922 may be obtained from the Dominion Fire Commissioner, Department of Public Works.

Year	Fires Reported	Property Loss ¹	Loss per Capita	Deaths by Fire	Year	Fires Reported	Property Loss ¹	Loss per Capita	Deaths by Fire
	No.	\$	\$	No.		No.	\$	\$	No.
1947.....	52,931	57,050,461	4.53	390	1953.....	67,519	84,270,896	5.70	477
1948.....	53,048	67,144,473	5.21	493	1954.....	68,638	91,440,478	6.01	479
1949.....	54,500	65,159,044	4.94	542	1955.....	70,096	102,767,776	6.59	569
1950 ²	59,710	81,525,298	5.88	439	1956.....	80,746	106,772,153	6.64	601
1951.....	60,317	76,157,807	5.64	535	1957.....	82,088	133,492,277	8.05	638
1952.....	64,057	80,902,205	5.74	565	1958.....	86,919	120,258,696	7.05	532

¹ Excludes forest fires and Federal Government property losses.

² Includes Newfoundland.

³ New-

foundland included from 1955.

The provincial property losses for 1955-58 given in Table 18 include both insured and uninsured losses. The percentages of the provincial totals uninsured in 1958 were: Prince Edward Island 34; Nova Scotia 26; New Brunswick 29; Quebec 13; Ontario 13; Manitoba 17; Saskatchewan 7; Alberta 26; British Columbia 34; and the Yukon and Northwest Territories 42. Uninsured losses formed 17 p.c. of the total losses for Canada.

18.—Fire Losses, by Province, 1955-58

Province or Territory	1955	1956	1957	1958		
	Property Loss ¹			Fires Reported	Property Loss ¹	Loss per Capita
	\$	\$	\$	No.	\$	\$
Newfoundland.....	538,702	1,510,183	5,396,315	1,543	4,726,783	5.63
Prince Edward Island.....	378,124	444,180	891,015	437	1,027,267	10.27
Nova Scotia.....	2,495,579	4,024,029	3,436,728	2,141	3,714,389	5.23
New Brunswick.....	3,127,983	3,918,448	4,448,217	2,196	3,191,935	5.53
Quebec.....	38,060,125	36,900,300	48,408,380	38,153	44,776,995	9.17
Ontario.....	29,607,786	29,189,908	43,439,433	25,606	35,655,789	6.14
Manitoba.....	4,330,540	5,046,372	4,005,283	2,308	3,782,329	4.35
Saskatchewan.....	5,902,422	2,956,382	2,063,809	2,215	3,980,048	4.48
Alberta.....	6,810,883	6,840,901	6,532,451	4,186	6,490,742	5.41
British Columbia.....	10,889,620	15,308,745	14,534,628	8,063	12,702,394	8.23
Yukon and Northwest Territories.....	126,012	632,705	336,018	71	210,025	6.36
Canada.....	102,767,776	106,772,153	133,492,277	86,919	120,258,696	7.05

¹ Excludes forest fires and Federal Government property losses.

19.—Fire Losses, by Type of Property, 1956-58

Type of Property	1956		1957		1958	
	Fires Reported	Property Loss ¹	Fires Reported	Property Loss ¹	Fires Reported	Property Loss ^{1,2}
	No.	\$	No.	\$	No.	\$
Residential.....	60,771	26,127,326	61,099	30,667,492	66,464	27,797,073
Mercantile.....	7,760	33,119,000	7,937	43,902,473	8,490	51,169,929
Farm.....	5,292	8,585,457	5,099	9,445,788	5,141	10,165,959
Manufacturing.....	1,292	13,604,843	1,345	16,355,401	1,473	9,754,931
Institutional and assembly.....	925	5,674,618	1,042	7,863,917	1,016	6,287,605
Miscellaneous.....	4,706	19,660,909	5,566	25,257,206	4,345	12,823,916
Totals.....	80,746	106,772,153	82,088	133,492,277	86,919	120,258,696

¹ Excludes forest fires and Federal Government property losses.

² Addition not accurate; breakdown for Newfoundland not complete.

20.—Value of Property Loss, by Reported Cause of Fire, 1956-58

Reported Cause	1956		1957		1958	
	Fires Reported	Property Loss ¹	Fires Reported	Property Loss ¹	Fires Reported	Property Loss ¹
	No.	\$	No.	\$	No.	\$
Smokers' carelessness.....	30,974	5,150,175	31,425	6,022,515	36,052	5,656,205
Stoves, furnaces, boilers and smoke pipes.....	5,401	5,452,350	6,570	6,486,429	7,036	7,785,707
Electrical wiring and appliances.....	6,955	12,897,828	7,461	16,224,484	7,546	13,887,770
Matches.....	2,295	1,543,228	2,307	2,174,771	2,369	1,425,247
Defective and overheated chimneys and flues.....	4,632	3,179,316	3,633	2,628,501	3,372	2,956,795
Hot ashes, coals and open fires.....	1,986	1,477,492	2,014	2,058,806	1,764	1,267,018
Petroleum and its products.....	1,805	5,332,913	1,638	3,140,335	1,129	2,808,010
Lights, other than electric.....	1,480	1,989,111	2,183	6,647,458	1,668	2,841,953
Lightning.....	2,186	2,765,426	2,096	1,407,691	1,903	1,030,148
Sparks on roofs.....	475	558,156	553	641,494	557	497,647
Exposure fires.....	600	1,640,378	565	1,511,870	695	1,370,487

¹ Excludes forest fires and Federal Government property losses.

20.—Value of Property Loss, by Reported Cause of Fire, 1956-58—concluded

Reported Cause	1956		1957		1958	
	Fires Reported	Property Loss ¹	Fires Reported	Property Loss ¹	Fires Reported	Property Loss ¹
	No.	\$	No.	\$	No.	\$
Spontaneous ignition.....	339	1,128,670	338	1,656,533	386	1,574,339
Incendiarism.....	317	2,011,835	454	2,019,602	466	2,895,650
Miscellaneous known causes (explosions, fireworks, friction, hot grease or metal, steam or hot water pipes, etc.).....	10,448	6,229,181	8,022	8,881,661	10,218	10,759,923
Unknown.....	10,853	55,416,096	12,829	71,990,127	11,758	63,501,818
Totals.....	80,746	106,772,153	82,088	133,492,277	86,919	120,258,696

¹ Excludes forest fires and Federal Government property losses.

Subsection 3.—Casualty Insurance Transacted in Canada by Companies under Federal Registration

The various classes of casualty insurance are shown in Table 21. These figures relate only to companies registered by the Federal Government.

21.—Net Casualty Premiums Written, Premiums Earned and Claims Incurred in Canada, 1958

NOTE.—Excluding marine insurance for which a certificate of registration is not required. Less all reinsurance or Canadian companies and registered or licensed reinsurance only for British and foreign companies.

Class of Business	Premiums Written				Premiums Earned	Claims Incurred
	Canadian Companies	British Companies	Foreign Companies	Total	All Companies	All Companies
	\$	\$	\$	\$	\$	\$
Accident—						
Personal.....	2,273,815	2,515,715	4,436,885	9,226,415	8,900,506	3,943,899
Public liability.....	8,576,154	8,821,703	7,204,972	24,602,829	22,840,945	13,432,708
Employers' liability.....	1,660,318	2,289,853	1,080,004	5,030,175	5,045,191	2,316,582
Combined accident and sickness.....	63,874,926	1,960,934	94,087,719	159,923,579	159,935,378	119,695,997
Aircraft.....	117,140	2,040,167	822,049	2,979,356	2,703,919	1,282,188
Automobile.....	108,879,111	64,017,977	82,998,509	255,895,597	240,034,139	149,503,239
Boiler—						
Boiler.....	2,550,965	916,239	1,013,296	4,480,500	3,604,099	483,594
Machinery.....	1,415,572	201,226	959,653	2,576,451	2,225,081	776,313
Credit.....	313,526	—	642,491	956,017	908,689	183,444
Earthquake.....	5,837	12,463	8,346	26,646	45,335	73
Explosion.....	178	814	4,410	5,402	4,971	402
Falling aircraft.....	—	—	—15	—15	5	—
Forgery.....	40,646	7,238	11,042	58,926	70,935	31,235
Guarantee—						
Fidelity.....	1,581,990	816,042	1,482,987	3,881,019	3,458,629	3,145,150
Surety.....	3,037,357	872,247	2,036,536	5,946,140	5,734,166	1,055,125
Hail.....	328,516	216,607	2,639,293	3,184,356	3,180,638	893,938
Inland transportation.....	1,045,077	1,719,549	3,249,483	6,014,109	6,021,719	2,607,235
Livestock.....	7,439	33,110	36,546	77,095	80,302	47,304
Personal property.....	7,607,608	13,024,910	15,011,562	35,644,080	33,769,317	21,254,679
Plate glass.....	853,904	746,076	549,272	2,149,252	2,032,781	1,312,026
Real property.....	87,541	777,501	477,769	1,342,811	1,600,620	1,072,548
Sickness.....	346,618	682,184	826,019	1,854,821	1,888,412	831,904
Sprinkler leakage.....	74	399	1,056	1,529	1,051	—1,597
Theft.....	1,970,775	1,989,885	1,962,925	5,923,585	5,644,949	4,075,821
Title.....	—	—	9,500	9,500	8,555	—
Water damage.....	—	—	4,932	4,932	10,071	—1,791
Weather.....	100	66	15,767	15,933	15,896	10,960
Windstorm.....	122,056	1,383	27,673	151,112	187,708	51,081
Totals.....	206,697,243	103,664,288	221,600,621	531,962,152	509,954,006	328,014,057

Subsection 4.—Finances of Companies Transacting Fire and Casualty Insurance under Federal Registration

The financial statistics of Tables 22 to 24 relate to fire and casualty insurance transacted by companies under federal registration. The figures for British and foreign companies apply to their assets, liabilities and operations in Canada only. On the other hand, the assets and liabilities, revenue and expenditure of Canadian companies are given for total business, including business arising out of Canada as well as in Canada.

22.—Total Assets for Fire and Casualty Insurance of Canadian Companies under Federal Registration and Assets in Canada for Fire and Casualty Insurance of British and Foreign Companies under Federal Registration, 1956-58.

Assets	1956	1957	1958
	\$	\$	\$
Canadian Companies¹ (In and Out of Canada)			
Real estate.....	9,007,637	9,572,647	10,889,616
Mortgage loans and sale agreements.....	5,816,600	6,036,592	6,013,358
Bonds, debentures and stocks.....	297,017,474	309,906,038	332,011,246
Agents' balances and premiums outstanding.....	30,128,617	33,200,389	37,875,977
Cash.....	26,272,990	26,075,954	33,657,834
Interest, dividends, and rents, due and accrued.....	2,466,014	2,722,333	3,126,995
Other assets.....	23,377,762	25,542,145	27,496,777
Totals, Assets of Canadian Companies.....	394,087,094	413,056,098	451,071,803
British Companies (In Canada)			
Real estate.....	1,264,411	3,379,370	2,923,560
Mortgage loans on real estate.....	859,776	1,304,004	1,538,221
Bonds, debentures and stocks.....	164,408,838	196,534,277	219,578,924
Agents' balances and premiums outstanding.....	22,107,838	24,229,451	28,247,390
Cash.....	11,420,337	11,301,072	12,952,856
Interest, dividends, and rents, due and accrued.....	873,913	1,138,576	1,473,157
Other assets in Canada.....	6,550,982	3,263,343	4,826,424
Totals, Assets of British Companies (In Canada)...	207,486,095	241,150,093	271,540,532
Foreign Companies (In Canada)			
Real estate.....	4,626,146	4,548,155	4,489,908
Mortgage loans on real estate.....	59,678	47,078	50,089
Bonds, debentures and stocks.....	240,259,386	286,551,071	305,729,890
Agents' balances and premiums outstanding.....	25,095,764	26,307,463	28,692,669
Cash.....	22,689,599	21,334,417	24,956,406
Interest, dividends, and rents, due and accrued.....	1,995,143	2,428,908	3,227,362
Other assets in Canada.....	3,843,074	4,741,842	5,835,479
Totals, Assets of Foreign Companies (In Canada)...	298,568,790	345,958,934	372,481,803

¹ Includes marine insurance.

23.—Total Liabilities for Fire and Casualty Insurance of Canadian Companies under Federal Registration and Liabilities in Canada for Fire and Casualty Insurance of British and Foreign Companies under Federal Registration, 1956-58.

Liabilities	1956	1957	1958
	\$	\$	\$
Canadian Companies ¹ (In and Out of Canada)			
Reserve for unsettled claims.....	76,880,794	85,538,440	90,888,710
Reserve of unearned premiums.....	107,623,628	114,941,500	127,945,621
Other policy reserves.....	4,562,254	5,147,122	9,204,449
Sundry items.....	51,620,907	54,788,419	59,377,234
Investment, contingency or general reserve funds.....	16,845,457	18,069,048	18,233,546
Totals, Liabilities of Canadian Companies.....	257,533,040	278,482,529	305,654,560
Capital stock paid.....	30,946,431	34,582,255	36,084,380
Amounts transferred from other funds.....	2,269,642	2,414,642	3,217,642
Surplus.....	103,337,981	97,576,672	106,115,221
	394,087,094	413,056,098	451,071,803
British Companies (In Canada)			
Reserve for unsettled claims.....	47,719,646	60,859,862	63,131,240
Reserve of unearned premiums.....	82,877,500	89,546,191	98,352,621
Other policy reserves.....	1,053,890	1,594,920	1,640,062
Sundry items.....	13,213,434	14,600,691	13,999,095
Totals, Liabilities of British Companies (In Canada).....	144,864,470	166,601,664	177,123,018
Excess of assets over liabilities in Canada.....	62,621,625	74,548,429	94,417,514
Foreign Companies (In Canada)			
Reserve for unsettled claims.....	67,395,164	80,192,028	82,085,798
Reserve of unearned premiums.....	109,280,687	117,984,449	126,034,285
Other policy reserves.....	10,517,323	7,539,468	10,294,614
Sundry items.....	20,305,488	19,231,751	22,354,260
Totals, Liabilities of Foreign Companies (In Canada).....	207,498,642	224,947,696	240,765,957
Excess of assets over liabilities in Canada.....	91,070,148	121,011,238	131,712,846

¹ Includes marine insurance.

24.—Profit and Loss Account of Canadian Companies and Gain or Loss and Other Income in Canada of British and Foreign Companies Transacting Fire and Casualty Insurance under Federal Registration, 1956-58.

Item	1956	1957	1958
	\$	\$	\$
Profit and Loss Account — Canadian Companies (In and Out of Canada)			
Underwriting Gain.....	-3,757,445	-12,263,911	-1,740,766
<i>Add:</i> Interest, dividends and rents.....	11,482,471	12,622,980	13,945,041
Received from shareholders.....	5,440,267	4,947,628	1,906,553
Gain in market value of investments.....	-4,818,853	-3,180,625	2,803,698
Gain on sale of investments.....	1,238,881	1,429,949	1,461,521
Gains from other sources.....	3,097,877	2,219,271	2,385,218
<i>Deduct:</i> Investments written down.....	844,454	169,231	380,039
Dividends to policyholders.....	1,611,657	2,060,603	1,725,482
Income taxes.....	1,539,679	352,392	2,211,501
Losses from other sources.....	5,584,117	3,561,101	3,799,925
Dividends to shareholders.....	3,651,951	2,433,075	2,690,335
Balance, Net Gain.....	-548,660	-2,801,113	9,953,983

24.—Profit and Loss Account of Canadian Companies and Gain or Loss and Other Income in Canada of British and Foreign Companies Transacting Fire and Casualty Insurance under Federal Registration, 1956-58—concluded.

Item	1956	1957	1958
	\$	\$	\$
Gain or Loss and Other Income — British Companies (In Canada)			
Underwriting Gain	-11,443,480	-30,799,476	-4,417,433
Deduct: Income taxes.....	-10,814	-39,530	334,273
Net Gain or Loss	-11,432,666	-30,759,946	-4,751,706
Other Revenue—			
Interest, dividends and rents.....	3,938,838	5,261,709	6,108,554
Sundry income.....	91	42,915	76,454
Gain or Loss and Other Income — Foreign Companies (In Canada)			
Underwriting Gain	-13,958,288	-26,164,561	3,870,848
Deduct: Dividends to policyholders and others.....	3,912,471	3,638,315	3,383,470
Income taxes.....	535,749	-67,266	1,398,953
Losses from other sources.....	-23,100	—	—
Net Gain or Loss	-18,383,408	-29,735,610	-911,575
Other Revenue—			
Interest, dividends and rents.....	7,816,535	9,445,113	10,476,421
Sundry income.....	77,711	100,312	321,017

Section 3.—Government Insurance

In addition to the insurance provided by private insurance companies, various types of government insurance schemes have been adopted in recent years by the federal and provincial governments.

Information on unemployment insurance, health insurance, veterans insurance, export credits insurance, etc., will be found in the appropriate Chapters on Labour, Health and Welfare, Foreign Trade, etc.

Provincial Insurance Schemes.—Saskatchewan.—The Saskatchewan Government Insurance Office, a Crown corporation established by the Saskatchewan Government Insurance Act, 1944, commenced business in May 1945. It deals in all types of insurance other than sickness, life and hail. The aim of the legislation is to provide residents of the province with low-cost insurance designed for their particular needs. Rates are based on loss experience in Saskatchewan only and the surpluses are invested, as far as possible, within the province. Premium income for 1959 amounted to \$7,588,594 and earned surplus to \$508,723. The total amount made available to the Government of Saskatchewan since the beginning of government insurance operations in 1945 to Dec. 31, 1959 was \$3,450,633. Assets at the latter date were \$16,881,497, of which more than \$10,000,000 were invested in bonds and debentures issued by Saskatchewan schools, municipalities and hospitals. Over 600 independent insurance agents sell government insurance throughout Saskatchewan.

The Automobile Accident Insurance Act, which became effective Apr. 1, 1946, is administered by the Saskatchewan Government Insurance Office. It establishes a compulsory automatic insurance plan designed to provide a reasonable minimum of compensation for losses arising from motor vehicle accidents regardless of fault. Rates vary from \$4 a year for trucks to \$40 for late-model private passenger cars, and also vary for other types of motor vehicle depending on size and usage. From the inception of the Act in 1946 to Apr. 30, 1960, more than \$41,000,000 were paid in claims.

The Saskatchewan Government Insurance Office, under contract with the Saskatchewan Department of Natural Resources, offers insurance to farmers covering damage to unharvested crops by certain wildlife such as ducks, geese, sandhill cranes, deer, elk, bear and antelope.

Information regarding the operation of the Saskatchewan Government Insurance Office or the Automobile Accident Insurance Act may be obtained from the Promotion and Advertising Department of the Saskatchewan Government Insurance Office, 11th and Cornwall Streets, Regina, Sask.

Alberta.—Provincial Government insurance in Alberta, coming within the purview of the Alberta Insurance Act, relates firstly to the Alberta General Insurance Company, in which the entire business of the fire branch of the Alberta Government Insurance Office was vested by the Legislature on Mar. 31, 1948, and secondly to the Life Insurance Company of Alberta, which was constituted on the same date to take over the life branch of the Alberta Government Insurance Office. Each company is administered by a separate board of directors. The Lieutenant-Governor in Council appoints the members to the respective boards but the charter of the Life Insurance Company of Alberta provides for the election of two policyholder directors. While both companies are Crown corporations, they are not entitled to the usual immunities of the Crown, since they may sue and be sued in any court of competent jurisdiction.

A variety of agencies in Alberta offer forms of prepaid protection corresponding to insurance but the nature of the enabling legislation governing these plans emphasizes the fact that they do not constitute insurance. Because such exemptions are specifically provided by the insurance laws of the province, reference to these plans is necessary only to make it clear that they do not come within the scope of the Alberta Insurance Act.

It should be noted that the Alberta Hail Insurance Act is administered by the Provincial Treasurer but none of the provisions of the Alberta Insurance Act apply to the Alberta Hail Insurance Board.

Information on insurance matters additional to that set out above may be obtained from the Superintendent of Insurance, Department of the Provincial Secretary, Edmonton, Alta.

CHAPTER XXVI.—DEFENCE OF CANADA

CONSPECTUS

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NOTE.—The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

PART I.—THE ARMED SERVICES AND DEFENCE RESEARCH*

Section 1.—The Department of National Defence

The Minister and Associate Minister of National Defence exercise control over and management of the Canadian Armed Forces, the Defence Research Board and other matters relating to national defence. Under their direction the three Chiefs of Staff are responsible for the control and administration of their respective Services and the Chairman of the Defence Research Board is responsible for research and development in defence matters. The Chairman of the Chiefs of Staff Committee is responsible to the Minister for ensuring that all matters of joint defence and defence policy, in its widest sense, are carefully examined and co-ordinated before decisions are made.

The civilian administration of the Department is organized under the Deputy Minister and is constituted on a functional basis. The Deputy Minister maintains a continuing review and control over the financial aspects of operational policy, logistics, and personnel and administration. The Deputy Minister is assisted by an Associate Deputy Minister and four Assistant Deputy Ministers each of whom administers a division of the Deputy Minister's branch responsible for matters of: administration and personnel; construction, engineering and properties; finance; and supply. Also responsible to the Deputy Minister are: the Controller General of Inspection Services, the Judge Advocate General, the Chief Secretary, and the Director of Public Relations.

A number of committees meet at regular intervals to consider and advise on joint issues. These include:—

- (1) **Defence Council.**—Composed of the Minister of National Defence (Chairman), the Associate Minister (Vice-Chairman), the Parliamentary Secretary, the Deputy Minister, the Chairman of the Chiefs of Staff Committee, the three Chiefs of Staff, the Chairman of the Defence Research Board and the Associate Deputy Minister; its purpose is to advise the Minister on administrative and other matters.
- (2) **Chiefs of Staff Committee.**—Composed of the Chairman of the Chiefs of Staff, the three Chiefs of Staff and the Chairman of the Defence Research Board. The Deputy Minister of National Defence attends regularly and the Secretary to the Cabinet and the Under Secretary of State for External Affairs attend when required. The purpose of the Committee is to maintain a continuous review of all operational problems; sub-committees consider various aspects of these problems and report to the parent committee.

* Prepared in the Office of the Deputy Minister, Department of National Defence, Ottawa.

- (3) **Personnel Members Committee.**—Composed of the Chief of Naval Personnel, the Adjutant-General, the Air Member for Personnel, the Assistant Deputy Minister (Administration and Personnel), the Assistant Deputy Minister (Finance) and a representative of the Chairman of the Defence Research Board. The purpose of the Committee is to examine personnel problems of the three Services with the general aim of achieving uniform personnel policies; sub-committees consider various aspects of personnel problems and report to the parent committee.
- (4) **Principal Supply Officers Committee.**—Composed of the Chief of Naval Technical Services, the Quartermaster-General, the Air Member for Technical Services, the Assistant Deputy Minister (Requirements) and a representative of the Chairman of the Defence Research Board. The purpose of the Committee is to consider logistical problems; sub-committees consider various aspects of these problems and report to the parent committee.

Defence Supply Committee.—An interdepartmental committee composed of the Deputy Ministers of National Defence and of Defence Production and the senior military and civilian supply officers of the two Departments has been established to review interdepartmental procurement and production problems and consider various policy aspects of the procurement of ammunition, armament, aircraft, etc. Eleven panels consider various aspects of these problems and report to the parent committee.

Canada-United States Committee on Joint Defence.—Composed of: for Canada, the Secretary of State for External Affairs, the Minister of National Defence and the Minister of Finance; for the United States, the Secretary of State, the Secretary of Defense and the Secretary of the Treasury; together with such appropriate Cabinet Members as either Government may designate from time to time as the need arises.

The function of this Committee is to consult periodically on any matters affecting the joint defence of Canada and the United States; to exchange information and views at the Ministerial level on problems that may arise, with a view to strengthening further the close and intimate co-operation between the two Governments on joint defence matters; and to report to the representative Governments on such discussions in order that consideration may be given to measures deemed appropriate and necessary to improve defence co-operation. The Committee meets at least once a year or as may be considered necessary by the two Governments. Meetings normally alternate between Canada and the United States with the host country providing the chairman.

Liaison Abroad.—The Chairman of the Chiefs of Staff, who is the Canadian military representative in the North Atlantic Treaty Organization, is responsible for co-ordinating all NATO military matters and acts as a military adviser to Canadian NATO delegations. For purposes of liaison and the furtherance of international co-operation in defence, Canada also maintains: (1) the Canadian Joint Staff (London) representing the three Services and the Defence Research Board in the United Kingdom, the chairman of which is the principal military adviser to the Canadian High Commissioner in London, the principal military adviser to the Permanent Canadian Delegate to the NATO Council and the Canadian National Military Representative to SHAPE; (2) the Canadian Joint Staff (Washington) representing the three Services and the Defence Research Board in the United States, the chairman of which is the principal military adviser to the Canadian Ambassador in Washington, the Canadian National Liaison Representative to SACLAN'T Headquarters and the Canadian member of the NATO Military Committee in Permanent Session; and (3) Service Attachés in various countries throughout the world. In addition, a number of defence matters of concern to both Canada and the United States are considered by the Permanent Joint Board on Defence.

Mutual Aid.—Canada's contributions to NATO are outlined on pp. 168-169.

Rates of Pay and Allowances.—The entire pay structure for comparable ranks in the different Services is on a uniform basis. Monthly rates for pay and allowances effective Oct. 1, 1960 are given in Table 1.

1.—Monthly Rates of Pay and Allowances for the Canadian Armed Forces, Effective Oct. 1, 1960

Royal Canadian Navy	Canadian Army	Royal Canadian Air Force	Basic Pay	Pro-gressive Pay										Group Pay for Tradesmen and Specialists								Subsistence Allowance		Ration Allowance	Marriage Allowance	Separated Family's Allowance (personnel not in married quarters) with Children																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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Ordinary Seaman (under 17 years)	Private recruit (under 17 years)	Aircraftman 2 (under 17 years)	\$ 56	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

RATES OF PAY AND ALLOWANCES

1179

Chief Petty Officer ¹	Warrant Officer 1	Warrant Officer 1	304	5	5	5	12	30	54	63	72	90	95	110	30	30	95	110
ROTP Cadet	ROTP Cadet	ROTP Cadet	63	—	—	—	—	—	—	—	—	—	65	—	30	—	—	—
Midshipman	—	—	154	—	—	—	—	—	—	—	—	—	75	110	30	40	75	110
Acting Sub-Lieutenant	Second Lieutenant	Pilot Officer	225	—	—	—	—	—	—	—	—	—	75	110	30	40	75	110
Sub-Lieutenant	Lieutenant	Flying Officer	321	35	15	—	—	—	—	—	—	—	90	125	30	40	90	125
Commissioned Officer	Officer commissioned from S/Sgt or above	Officer commissioned from F/Sgt or above	393	20	20	30	—	—	—	—	—	—	90-95 ¹	110-125 ¹	30	40	90-95 ¹	110-125 ¹
Lieutenant	Captain	Flight Lieutenant	393	30	30	30	—	—	—	—	—	—	95	125	30	40	95	125
Lieutenant-Commander	Major	Squadron Leader	510	30	30	30	—	—	—	—	—	—	113	135	30	40	113	135
Commander	Lieutenant-Colonel	Wing Commander	639	35	35	35	—	—	—	—	—	—	126	150	30	40	126	150
Captain	Colonel	Group Captain	809	35	35	—	—	—	—	—	—	—	139	165	30	40	139	165
Commodore	Brigadier	Air Commodore	1,114	—	—	—	—	—	—	—	—	—	153	180	30	40	153	180
Rear-Admiral	Major-General	Air Vice-Marshal	1,265	—	—	—	—	—	—	—	—	—	165	195	30	40	165	195

¹ Depending on rank on promotion.

The allowances shown in Table 1 are explained briefly as follows.

Subsistence Allowance.—This allowance is granted whenever rations and quarters are not provided. A married man living with his family uses his subsistence allowance for their maintenance as well as his own.

Ration Allowance.—A ration allowance is granted when quarters are available but rations are not provided. It is not payable concurrently with subsistence allowance.

Marriage Allowance.—The amount of this allowance is \$30 a month for men and \$40 a month for officers, subject to a reduction of \$10 a month where permanent married quarters are occupied or \$2.50 a month where temporary married quarters are occupied. All ranks may draw this allowance upon marriage provided the initial training period has been completed and the age of 21 years has been attained by men and 23 years by officers.

Separated Family's Allowance.—An officer or man in receipt of marriage allowance, while separated from his dependants for any of various reasons (*i.e.*, movement of dependants prohibited, illness of dependants, lack of suitable accommodation), on being moved other than temporarily may be entitled to separated family's allowance at a rate and for a period depending on circumstances (*i.e.*, rank, reason for separation, whether or not he has children, whether or not his family is accommodated in married quarters, whether or not he is provided with quarters and rations). The rates listed are the maximum.

In addition to the above, *Foreign Allowances* are granted to officers and men posted for duty to a country outside Canada to compensate for additional living expenses incurred; these vary with rank, appointment and location. *Isolation Allowances* are granted to officers and men serving at specified isolated posts in Canada at rates depending upon location and circumstances. *Outfit Allowances and Clothing Credits* are as follows: Officers receive a single payment of \$450 on appointment and Warrant Officers Class I, \$270; men receive a free issue of clothing when they join and thereafter a monthly clothing credit or allowance of \$7, Navy Petty Officer 1st class and above \$9, and women \$8. An *Aircrew Allowance* of \$75 a month is paid to an officer or man undergoing flying training. For qualified aircrew this allowance may be increased to \$150, depending on rank, if filling an appointment requiring active and continuous flying duties and to \$100, depending on rank, for maintaining proficiency. *Submarine Allowance* is granted an officer or man undergoing submarine training or filling an appointment in a submarine; the allowance varies from \$65 to \$115 a month depending on rank. An officer or man actively engaged or undergoing training as a parachutist or on flying or submarine duty and not entitled to aircrew allowance or submarine allowance is paid a *Risk Allowance* at the rate of \$30 a month. *Medical and Dental Officers* are granted extra allowances according to rank.

Subsection 1.—The Royal Canadian Navy

Role and Organization.—The role of the Royal Canadian Navy is to defend Canada and to contribute to the collective defence of the NATO area against attack from the sea. In addition, the RCN may be required to assist in the support of the United Nations, as directed by the Canadian Government. To meet its role, the RCN maintains, in a state of readiness, an effective force of anti-submarine ships and aircraft with up-to-date equipment and logistic support.

The Royal Canadian Navy comes under the central authority of the Chief of Naval Staff at Naval Headquarters in Ottawa. The Flag Officer Atlantic Coast, at Halifax, N.S., and the Flag Officer Pacific Coast, at Esquimalt, B.C., exercise operational and administrative command of ships and establishments within the Atlantic and Pacific Coast Commands. The Flag Officers also hold the additional appointments of Maritime Commander Atlantic and Maritime Commander Pacific, respectively. As such, each is responsible for anti-submarine operations involving RCN and RCAF forces in his Command. The 21 Naval Divisions of the RCN(Reserve) come under the over-all command of the Commanding Officer Naval Divisions, with headquarters at Hamilton, Ont. There are

naval missions in London, England, and Washington, U.S.A., to maintain liaison with the Royal Navy and the United States Navy. As a result of Canada's NATO commitments (see pp. 168-169), officers of the Royal Canadian Navy serve on the staffs of: the Supreme Allied Commander, Atlantic, at Norfolk, Va., in the United States; the Commander-in-Chief, Eastern Atlantic Area, at Northwood in the United Kingdom; and the Commander-in-Chief, Western Atlantic Area, at Norfolk, Va. The Flag Officer Atlantic Coast holds the NATO appointment of Commander, Canadian Atlantic Sub-Area.

The strength of the RCN at Mar. 31, 1960 was 20,675 officers and men in the Regular Force and 3,311 in the Reserve Force.

Operations at Sea, 1959-60.—The Royal Canadian Navy now has more ships and men at sea than at any other period in peacetime; 49 p.c. of the officers and men of the RCN serve at sea, one of the highest sea-shore ratios of any navy.

At the beginning of 1960 the RCN had 62 warships in commission and two Royal Navy submarines under its operational control. The fleet included the aircraft carrier *Bonaventure*, seven St. Laurent and seven Restigouche class destroyer escorts, 11 older destroyer escorts, 18 frigates, ten minesweepers, two mobile repair ships and six smaller craft.

In the Atlantic, RCN ships and aircraft took part in several exercises with units of other NATO navies; while in the Pacific, Canadian destroyer escorts practised with units of the U.S. Navy.

Ships of the Royal Canadian Navy on training cruises visited Bermuda, southern United States, Trinidad, Hawaii, Japan, Hong Kong, Okinawa, Galapagos Islands, Chile, Peru, Puerto Rico, Panama Canal Zone, the West Indies, Fiji Islands and Samoa.

Training.—The major shore training establishments are HMCS *Stadacona* at Halifax, N.S., HMCS *Naden* at Esquimalt, B.C., HMCS *Cornwallis* near Digby, N.S., HMCS *Shearwater* near Dartmouth, N.S., HMCS *Hochelaga* near Montreal, Que., HMCS *Gloucester* near Ottawa, and HMCS *D'Iberville* at Quebec City.

Facilities at *Stadacona* and *Naden* include schools for general and specialized training, drafting depots, hospitals and accommodation facilities necessary for the support of the ships based on each coast. The Naval Technical School, which was commissioned in 1958 in *Naden*, continues to provide naval technical apprentices of the engineering and hull technician trades with intensive training from basic to advanced level.

New-entry or re-entry training, 15 weeks in duration, is conducted at the basic training establishment *Cornwallis*. A total of 2,813 men and women, including apprentices, took basic training during 1959. The new-entry training establishment *D'Iberville* gives all French-speaking new-entry personnel a basic course in English and preliminary training in seamanship and other professional naval subjects. After completing the course at *D'Iberville*, these new entries join classes at *Cornwallis*.

Trade and specialist supply training is conducted in *Hochelaga*. Also at this establishment management and logistic courses are conducted for both officers and civilian personnel. Communications training is carried out in *Cornwallis* and *Gloucester*.

Under the Regular Officer Training Plan, 33 cadets who graduated from Royal Military College or Canadian universities were promoted to Sub-lieutenant in 1959. Of those graduating from RMC, 17 continued to university for a final year in engineering. Thirty-three Sub-lieutenants from the ROTP joined the fleet in 1959, including 17 officers who had attended university for one year after having graduated from RMC. In August 1959 there were 176 naval cadets in training under the ROTP and 11 under the College Training Plan.

Under the HMCS *Venture* plan, introduced in 1954, young men are enrolled as cadets and their term of service in the RCN is seven years unless they are granted a permanent commission. In August 1959 there were 84 cadets under training in *Venture* including six Belgian cadets. Thirty-five cadets were promoted after graduation to Acting Sub-lieutenant. Of these, 14 continued to pilot training with the RCAF to obtain their wings before receiving advanced flying training with the RCN; 21 went to technical courses in *Stadacona* to prepare for employment as surface officers. A University Naval Training Division program is conducted to give instruction to university students, with the object of providing well-trained junior officers for the RCN and the RCN(R). The training period is three years and cadets are required to complete three winter-training periods, two summer periods and certain specified courses. Promotion to Acting Sub-lieutenant or to Sub-lieutenant is dependent on academic status. In July 1959 there were 575 UNTD cadets in attendance at 26 Canadian universities and colleges. Of these, 513 cadets had received training during the summer in ships and shore establishments of the RCN.

Royal Canadian Navy (Reserve).—The recruiting and training of officers and men of the Royal Canadian Navy (Reserve) is conducted mainly through 21 Naval Divisions across Canada under the over-all command of the Commanding Officer Naval Divisions, with headquarters at Hamilton, Ont. Naval Divisions are established in the following centres:—

St. John's, Nfld., HMCS *Cabot*
 Charlottetown, P.E.I., HMCS *Queen Charlotte*
 Halifax, N.S., HMCS *Scotian*
 Saint John, N.B., HMCS *Brunswick*
 Quebec, Que., HMCS *Montcalm*
 Montreal, Que., HMCS *Donnacona*
 Toronto, Ont., HMCS *York*
 Ottawa, Ont., HMCS *Carleton*
 Kingston, Ont., HMCS *Cataragui*
 Hamilton, Ont., HMCS *Star*
 Windsor, Ont., HMCS *Hunter*

London, Ont., HMCS *Prevost*
 Port Arthur, Ont., HMCS *Griffon*
 Winnipeg, Man., HMCS *Chippawa*
 Regina, Sask., HMCS *Queen*
 Saskatoon, Sask., HMCS *Unicorn*
 Calgary, Alta., HMCS *Tecumseh*
 Edmonton, Alta., HMCS *Nonsuch*
 Vancouver, B.C., HMCS *Discovery*
 Victoria, B.C., HMCS *Malahat*
 Prince Rupert, B.C., HMCS *Chatham*.

Naval Divisions, commanded by Reserve officers, provide both basic and specialized training for officers and men of the RCN(R). The Great Lakes Training Centre at Hamilton conducts new-entry reserve training afloat during the summer months.

Royal Canadian Sea Cadets.—Royal Canadian Sea Cadets, sponsored by the Navy League of Canada and supervised by the RCN, consisted of 160 authorized corps in 1959. These were divided into seven Sea Cadet areas, supervised by 16 naval officers, responsible to the Commanding Officer Naval Divisions. Instruction is carried out by RCSC officers. Two RCSC training establishments—*Acadia* on the East Coast and *Quadra* on the West Coast—accommodated a total of 3,300 officers and cadets for two-week training periods in 1959. In addition Sea Cadets received eight-week training courses at the two establishments. Sea experience was provided for Cadets throughout the year in various types of ships of the RCN. The strength of the corps at the end of 1959 was 1,130 Sea Cadet officers and 9,960 Sea Cadets.

Subsection 2.—The Canadian Army

Organization.—Army Headquarters at Ottawa is organized into three separate branches. The General Staff Branch deals with all matters affecting the fighting efficiency of the Army, the Adjutant-General Branch deals with all problems affecting the soldier as an individual, and the Quartermaster-General Branch is responsible for supply. The senior appointment at Army Headquarters is the Chief of the General Staff who, through the Heads of the three Branches, directs all activities of the Canadian Army. For command

and control, Canada is divided into Commands and Areas each with its own headquarters divided into the same three branches as Army Headquarters. Locations of these headquarters are as follows:—

<u>Command</u>	<u>Headquarters</u>	<u>Area and Headquarters</u>
Western Command.....	Edmonton, Alta.....	(1) British Columbia Area, Vancouver, B.C.
		(2) Alberta Area, Edmonton, Alta.
		(3) Saskatchewan Area, Regina, Sask.
		(4) Manitoba Area, Winnipeg, Man.
Central Command.....	Oakville, Ont.....	(5) Western Ontario Area, London, Ont.
		(6) Central Ontario Area, Oakville, Ont.
		(7) Eastern Ontario Area, Kingston, Ont.
Quebec Command.....	Montreal, Que.....	(8) Eastern Quebec Area, Quebec, Que.
Eastern Command.....	Halifax, N.S.....	(9) New Brunswick Area, Fredericton, N.B.
		(10) Newfoundland Area, St. John's, Nfld.

The Canadian Army comprises the Canadian Army (Regular) and the Reserves. The Canadian Army (Regular) consists of four Infantry Brigade Groups and static units and installations for command and control. One of the Brigade Groups is in Europe with the NATO Force and is under command of the Supreme Allied Commander in Europe. The Reserves include the Canadian Army (Militia), the Regular Reserve, the Supplementary Reserve, the Canadian Officers' Training Corps, the Cadet Services of Canada and the Reserve Militia. Additional to but not an integral part of the Canadian Army are the Services Colleges, officially authorized cadet corps, rifle associations and clubs.

The strength of the Canadian Army (Regular) at Mar. 31, 1960 was 47,185 officers and men and the strength of the Canadian Army (Militia) was 40,010.

Operations in 1959.—In fulfilment of military obligations under the North Atlantic Treaty, Canada has continued to provide ground forces for the defence of Western Europe. The 4th Canadian Infantry Brigade Group, which consists of the 1st Regiment Royal Canadian Horse Artillery, the 8th Canadian Hussars (Princess Louise's), the 1st Battalion The Canadian Guards, the 2nd Battalion The Queen's Own Rifles of Canada, and the 1st Battalion The Black Watch (Royal Highland Regiment) of Canada, constituted the Canadian Army contribution to NATO at the end of the year. The Headquarters of the Brigade Group is at Soest, and married quarters for officers and men are located in the vicinity of Soest, Werl, Hemer and Iserlohn.

The Canadian Army continued to make a major contribution of approximately 870 officers and men to the United Nations Emergency Force in the Middle East. Their task is the patrolling of a sector of the Egypt-Israel Armistice Demarcation Line and the provision of communication, supply, transport, and workshop services to the Force. Canadian Army contributions to United Nations armistice commissions included 27 officers employed in Kashmir, Palestine and Korea.

As a result of Canadian membership in the International Supervisory Commissions of Viet Nam and Cambodia, the Canadian Army continued to provide approximately 65 officers and men for truce supervisory duties in Indo China.

The Army in 1959 assumed certain responsibilities for national survival including warning, nuclear detonation and fallout reporting, control of re-entry operations into damaged areas and areas subjected to heavy fallout and emergency communications.

Canada, as a member of the United Nations, may be called on to provide, at short notice, military forces for service in support of the United Nations. An infantry battalion has been specially trained and equipped for operations of this nature in any part of the world.

Training.—The policy of training is determined at Army Headquarters. General Officers Commanding Commands implement the training policies within their Commands, except for those conducted at Army and corps schools that are under the direct supervision of Army Headquarters. During 1959 the basic training of 3,320 recruits and the corps training of officers and men of the Canadian Army (Regular) were carried out at regimental depots, units and corps schools, and 5,979 personnel attended courses at the schools of instruction. Promotion qualification examinations consisting of written and practical tests were held to qualify Regular and Militia officers for the ranks of Captain and Major; 34 candidates passed qualification examinations for selection to attend the Canadian Army Staff College and 30 passed the entrance examination for the Royal Military College of Science. A training program was conducted during the winter months for all Regular officers to further their professional knowledge. Militia Staff Course examinations were conducted for Militia officers to qualify Captains and Majors for command and staff appointments. Qualifying courses for Junior NCO's were conducted under General Officers Commanding Commands. Senior NCO courses were conducted at corps schools in accordance with training standards.

French- and English-language training, which is available to all ranks of the Canadian Army, was conducted by Commands and AHQ. The Canadian Army Training School conducted six-month French-language courses for English-speaking officers and NCO instructors. A number of French-speaking potential NCO's also received English-language training.

Officers from the RCN and RCAF as well as officers from the United States, the United Kingdom, Australia, Pakistan, India, Germany, Belgium, Turkey, Norway, France and Italy attended courses at Canadian Army schools of instruction.

Trade and specialty training is given at corps schools and units. Where feasible, the facilities of civilian schools are used to supplement training at Army establishments. Training is conducted in accordance with the appropriate training standard for each trade or specialty. When required by technical developments in the Army, trades are revised and new trades are introduced. Trades relating to aircraft maintenance and repair are being studied in keeping with the decision that the Army will use certain aircraft.

The apprentice training program inaugurated in September 1952 is designed to train selected young men as soldier tradesmen and to give them a background for advancement to senior non-commissioned ranks in the Army. A high entry standard has been set to ensure that the prospective soldier apprentice will be capable of absorbing trade and academic training and also of developing the leadership qualities essential in senior NCO's. During 1959 an additional 498 apprentices were enrolled and 42 civilian teachers were employed to provide academic instruction for about 864 apprentice soldiers. Academic credits are obtained from the educational authorities of the province where the training is conducted. Apprentices receive trades training as clerks, cooks, carpenters, electricians, wireless operators, radar operators, radio mechanics, storemen, gun mechanics, vehicle mechanics and armourers. A balanced training program is designed to stimulate the interest of the apprentice. Military, trade, academic and recreational training are integrated. Separate messing, canteen and sleeping arrangements are provided for apprentices.

The training of the Defence of Canada Force continued throughout 1959. Airborne continuation training was carried out by each unit in conjunction with unit exercises. Defence of Canada Force units carried out exercises during the winter under cold weather conditions. Parachute and air supply courses were conducted at the Canadian Joint Training Centre at Rivers, Man., and courses in Arctic training at Fort Churchill, Man. Collective training for units in Canada was carried on during the summer months at Camp Gagetown, Camp Petawawa and Camp Wainwright. All arms training comprised sub-unit and unit training and culminated in exercises at the Brigade Group level.

The Reserves.—Funds were provided to permit an average of 45 days of training for all ranks of the Militia during 1959, including seven days of summer training by attachment to Regular Army units, camps or headquarters. During the summer, 10,989 all ranks, including Canadian Women's Army Corps members and Young Soldiers, were attached for summer training, intended to prepare the Militia for assistance in National Survival.

The Regular Officer Training Plan (ROTP).—The Regular Officer Training Plan is in effect at the three Canadian Services Colleges and at all Canadian universities and affiliated colleges that have contingents of the COTC. The purpose of the Plan is to train selected students for commissions in the Canadian Army (Regular). Students enrol in the Canadian Army (Regular) with a special rate of pay; tuition and essential fees are paid and grants are given for books and instruments needed for study. During the year ended Mar. 31, 1960, 88 of these sponsored students graduated and were commissioned in the Canadian Army (Regular). Training consists of military studies, drill and physical training during the academic year; the summer term is devoted to practical training at military establishments.

The Canadian Officers' Training Corps (COTC).—In addition to the Regular Officer Training Plan, units of the Canadian Officers' Training Corps are maintained at Canadian universities to produce primarily, from among university undergraduates, officers for the reserve components of the Army. University graduates who have been members of the Canadian Officers' Training Corps are also eligible for commissions in the Canadian Army (Regular). Members of the COTC undertake the same training as members of the ROTP. During the year ended Mar. 31, 1960, seven who had trained with the COTC were awarded commissions in the Canadian Army (Regular).

Army Cadets.—As at Mar. 31, 1960, the program for Royal Canadian Army Cadets involved 2,201 Cadet Services of Canada officers and civilian instructors and 65,289 cadets in 494 corps. In 1959, a total of 5,026 selected cadets attended trades and specialist summer camps of seven weeks duration at Aldershot, N.S., Farnham, Que., Ipperwash and Camp Borden, Ont., Dundurn, Sask., and Vernon, B.C.; 508 cadets attended two-week Junior Leader camps at Aldershot and Clear Lake, Man. The National Cadet Camp at Banff, Alta., was conducted for 235 Master or First Class cadets. A total of 743 Cadet Services of Canada officers and civilian instructors were employed at or attended cadet camps under instruction.

Subsection 3.—The Royal Canadian Air Force

Organization.—The RCAF is controlled from Air Force Headquarters at Ottawa, which is responsible for planning, policy and administration of the Regular and Reserve components of the RCAF. The Headquarters organization comprises four major Divisions—plans and operations, technical services, personnel and resource control. On Mar. 31, 1960 the major RCAF formations and their Headquarters locations were as follows:—

<i>Formations</i>	<i>Headquarters</i>
Air Defence Command.....	St. Hubert, Que.
5 Air Division.....	Vancouver, B.C.
1 Air Division.....	Metz, France
Air Transport Command.....	Trenton, Ont.
Air Materiel Command.....	Rockcliffe, Ont.
Maritime Air Command.....	Halifax, N.S.
Training Command.....	Winnipeg, Man.

The organization included 29 flying squadrons of the RCAF Regular and 11 flying squadrons of the Reserve. The Reserve squadrons performed an emergency and rescue role. Nine of the Regular squadrons contributed to the air defence of the Canada-United States region; 12 squadrons were assigned to the air defence of Western Europe; four squadrons were required for RCAF transport operations at home and abroad; three maritime squadrons operated in conjunction with other forces for the defence of Canada's East and West Coasts; and one reconnaissance squadron carried out aerial photography and reconnaissance in the Canadian North.

The strength of the Royal Canadian Air Force at Mar. 31, 1960 was 51,737 officers and men in the Regular Force and 3,792 in the Auxiliary Air Force.

Operations in 1959.—The RCAF continued to fill its air defence commitments, improve the effectiveness of its air defence squadrons and emphasize defence integration with the USAF under NORAD. The Canadian air defence force remained at nine squadrons of *CF-100 MK V* aircraft. No. 1 Air Division in Europe, comprised of eight *F-86*, four *CF-100 MK IVB* and one *AC and W* squadrons, continued to fill Canada's commitment to the NATO air defence fighter force.

Air Defence Command continued its planned build-up and had under operation three radar systems—the Distant Early Warning Line (DEW), the Mid-Canada Line (MCL), and the Pinetree Line—as an integral part of North American Air Defence Command (NORAD). The southern portion of the Ground Observer Corps was disbanded effective June 1, 1960. The northern portion continued operations as a supplement to the early warning radar system.

The program of re-equipping Maritime Air Command squadrons with improved aircraft and equipment continued throughout the year. On the East Coast a second squadron was converted to *Argus* aircraft, the largest and most modern anti-submarine aircraft in operational use. The maritime force, consisting of two *Argus* squadrons on the East Coast and a *Neptune* squadron on the West Coast, participated in a number of national and NATO exercises. Daily patrols and surveillance over the ocean areas on both coasts were conducted throughout the year.

Air Transport Command continued to provide support to the Air Division and the Army Brigade in Europe using *North Star* aircraft. *North Stars* were also used to support the United Nations Emergency Force in Egypt. A flying unit, operating *Dakota* and *Otter* aircraft, was maintained for local employment in Egypt in support of UNEF. *Fairchild C-119* aircraft of Transport Command were engaged in cargo and personnel carrier operations in Canada and in paratroop training for the Canadian Army. Both *North Star* and *C-119* aircraft were used for operations in support of the Arctic weather stations. Routine reconnaissance flights in the Arctic Archipelago and photographic missions for the Department of National Defence were carried out by 408 Squadron.

During the year, the RCAF continued to provide Search and Rescue services in Canadian areas of responsibility. Forty-two major search operations were conducted, of which 27 were for civil aircraft and four were for military aircraft. Marine craft and miscellaneous cases accounted for the remainder. During the year, 152 mercy flights were performed. The total flying time for all search and rescue operations was 5,527 hours.

Training.—During the year ended Mar. 31, 1960, the last of the aircrew trainees accepted under the NATO training plan and the agreement with the Government of Germany completed their training in Canada. Aside from providing aircrew training to meet its own requirements, the RCAF provided training to Wings standard for a limited number of aircrew trainees of the air forces of the Netherlands, Norway and Denmark under bilateral agreements with the governments of those countries. Advanced flying training was also provided to a small number of pilots of the Turkish Air Force and the German Air Force.

Aircrew trainees entering the Service receive primary training at Centralia, Ont., and pilot trainees receive basic flying training at Moose Jaw, Sask., and Penhold, Alta. Advanced flying training on jet aircraft is conducted at Portage la Prairie and Gimli in Manitoba and advanced flying training on twin-engine aircraft is conducted at Saskatoon, Sask. Both the basic and applied phases of training for Observer trainees are conducted at Winnipeg, Man. Flying Instructor training is conducted at Moose Jaw, Sask., and Portage la Prairie, Man.

Formal trade courses for tradesmen and technicians and newly commissioned non-flying list officers in aeronautical engineering, armament, supply, telecommunications and flying control were conducted at the RCAF technical schools in Ontario located at Camp Borden, Aylmer and Clinton. Aircraft system trainers were used extensively to support technician and aircrew training programs at field technical training units and operational training units. Trade advancement training programs continued at all units, both regular and auxiliary, to help tradesmen advance into the qualified trade group levels. Semi-annual trade examinations were written under the direction of a Central Examination Board. Language training programs were conducted where necessary.

RCAF Reserve.—The active sub-components of the RCAF reserves are designated as the Auxiliary and the Primary Reserve. Eleven Auxiliary flying squadrons, equipped with transport aircraft, are maintained to train a reserve of transport aircrew and operate in an emergency transport role. In addition, the RCAF maintains 13 Auxiliary medical units, 14 aircraft control and warning squadrons and eight technical training units. The Primary Reserve is concerned mainly with the training of members of the University Reserve Training Plan (URTP), the Manning Support Officers (MSO) and the Reserve Tradesmen Training Plan (RTTP).

During the year ended Mar. 31, 1960, officer development courses were conducted for some 300 first-year URTP university undergraduates at Reserve Officer School, St. Johns, Que. Following this initial training some non-flying list cadets continued with basic courses in aeronautical engineering, telecommunications, armament, supply and accounts while others in the medical, air services and personnel lists were employed at Regular Force units on contact training. Second and third year flight cadets continued with their formal or contact training. The Reserve Tradesmen Training Plan was also continued with an annual intake quota of 1,750.

Royal Canadian Air Cadets.—Air cadet activities in Canada are sponsored and administered by the Air Cadet League of Canada. The League is a voluntary civilian organization formed in 1940 to provide preliminary aviation training for potential members of the Royal Canadian Air Force. The peacetime objective of air cadet training is to give basic training in aviation and other closely associated subjects as well as citizenship training which will better fit Canadian youth for careers in civilian or Service life. The RCAF works in partnership with the League and provides training personnel, syllabi and equipment.

The authorized ceiling of cadet enrolment is 25,500 and the strength at Jan. 31, 1960 was approximately 24,250, attached to 331 squadrons across Canada. Air cadet training is carried out in more than 270 communities from Newfoundland to British Columbia. During the summer of 1959, camps were held at RCAF Stations at Summerside, P.E.I., St. Johns, Que., Clinton, Ont., and Sea Island, B.C., attended by about 6,000 cadets together with officers and instructors. A seven-week course for senior leaders and drill instructors was held for 200 cadets at RCAF Station, Camp Borden, Ont.

Under the International Exchange Visits Program for 1959, sponsored jointly by the RCAF and the Air Cadet League, 58 cadets were exchanged with the United Kingdom, the United States, Denmark, the Netherlands, Norway and Sweden.

About 250 senior air cadets receive flying training annually at flying clubs through scholarships provided by the RCAF and additional scholarships are awarded by the Air Cadet League and other organizations, which in 1959 numbered 138.

Subsection 4.—The Defence Research Board

The Defence Research Board was established on Apr. 1, 1947 by an amendment to the National Defence Act. The Board consists of a full-time chairman and vice-chairman, five ex officio members and nine other appointed members. The ex officio members are the Chiefs of Staff of the three Armed Services, the Deputy Minister of National Defence and the President of the National Research Council. The other members, appointed by the Governor in Council for three-year terms, are selected from universities and industry because of their scientific and technical backgrounds.

The organization consists of headquarters staff, an operational research group and nine field research stations, and liaison offices at London, England, and Washington, U.S.A. Advisory committees composed of leading Canadian scientists provide invaluable assistance to the Board by their consideration of a variety of problems.

The Government, realizing the vital need for continuity in research, planned the Defence Research Board as a fully integrated and permanent part of the defences of the country. To assist co-ordination at the highest level, the Chairman of the Board has the status of a Chief of Staff and is a member of the Chiefs of Staff Committee and of the Defence Council. Thus the Defence Research Board has been described as a fourth Service. Its fundamental purpose is to correlate the special scientific requirements of the Armed Forces with the general research activities of the scientific community at large. The Board's policy is to select and concentrate its efforts upon defence problems of particular importance to Canada or for which Canada has unique resources or facilities. Existing research facilities such as the National Research Council are used wherever possible to meet the needs of the Armed Forces. The Board has built up new facilities only in those fields that have little or no civilian interest. From the policy of specialization it follows that close collaboration must be maintained with Canada's larger partners. Specialization is made possible only through the willingness of the United Kingdom and the United States to exchange the results of their broader programs for the less numerous but none the less valuable benefits of Canadian research.

The activities of the Defence Research Board are concerned primarily with maritime warfare, armament, telecommunications, Arctic, special weapons, operational, medical, aeronautical and materials research problems of specific interest to Canadian defence. To conduct this program of research, the Defence Research Board operates nine specialized research and development establishments and, in addition, organizes and supports research on problems of defence interest in universities and other agencies.

Research on maritime warfare problems is carried out at the Naval Research Establishment, Dartmouth, N.S., and at the Pacific Naval Laboratory, Esquimalt, B.C. The principal emphasis at each station is on problems related to submarine detection and tracking.

Research and development of weapons and armament is undertaken by the Defence Research Board in co-operation with the Armed Services at various establishments. The largest of these is the Canadian Armament Research and Development Establishment near Valcartier, Que. Its principal activities include research and development and testing of new and improved weapons.

Research on telecommunications is carried out at the Defence Research Telecommunications Establishment. This establishment is concerned mainly with problems of communication and air navigation and supports these with considerable effort in basic research in the fields of radio propagation and electronics components.

Research dealing with problems in Arctic operations is conducted at the Defence Research Northern Laboratory, Fort Churchill, Man. This Laboratory has given valuable support in the instrumentation of rockets fired from the rocket range located at this station.

Special weapons is the generic term used to cover research on the defensive aspects of chemical, biological and atomic weapons. This work is carried out at three Defence Research Board establishments—the Defence Research Chemical Laboratories at Ottawa, Ont., the Suffield Experimental Station at Ralston, Alta., and the Defence Research Kingston Laboratory at Barriefield, Ont.

Military, psychological, clothing and food research is carried out intramurally at the Defence Research Medical Laboratories near Toronto and extramurally in Canadian universities by means of a grant-in-aid program. An important field of activity is aviation medicine but investigations include naval and army problems as well as studies on blood substitutes, infection and immunity, burns and wounds, the effects of noise on hearing, and other factors likely to affect a military man's efficiency and health.

Most of the basic aeronautical research program is also carried out extramurally in Canadian universities and in Canadian industry. The principal fields covered are aerodynamics, aircraft propulsion, and engineering materials.

Operational research is carried on in the Defence Research Board by a Headquarters group. This group conducts long-range scientific analyses of future defence problems; it is also responsible for computational work on behalf of other operational research sections in cases where the use of digital computational equipment is required. In addition to this group, trained operational research scientists are provided by the Defence Research Board to the operational research teams in the three Armed Services, and also to a fourth outside group known as the Defence Systems Analysis Group which undertakes, for the Chiefs of Staff Committee, analytical studies of those defence problems that lie beyond the executive responsibility of an individual Chief of Staff.

In all, the Board continues to support those fields of research that are of foremost interest to the Canadian Armed Services and the program is under continual review to ensure that cognizance is taken of all changes in emphasis in defence requirements. Close liaison is maintained between the Defence Research Board and the Department of Defence Production to ensure that research and development activities are closely integrated with production.

Section 2.—Services Colleges and Staff Training Colleges

Canadian Services Colleges.—The three Canadian Services Colleges are the Royal Military College of Canada founded at Kingston, Ont., in 1876, Royal Roads which was established in 1941 near Victoria, B.C., as a school for naval officers, and Collège Militaire Royal de Saint-Jean established at St. Johns, Que., primarily to meet the needs of French-speaking cadets. The Royal Military College and Royal Roads were constituted as Canadian Services Colleges in 1948, and Collège Militaire Royal de Saint-Jean was opened in 1952. In 1959 the Legislature of the Province of Ontario granted the Royal Military College a charter empowering it to grant degrees.

The purpose of the instruction and training at the Services Colleges is to impart the knowledge, to teach the skills and to develop the qualities of character and leadership essential to officers of all three Armed Services. The courses of instruction provided a sound and balanced liberal scientific and military education leading to degrees in Arts and Sciences which are granted by the Royal Military College. The organization and training give cadets the opportunity to command and to exercise judgment.

For cadets entering the Royal Military College and Royal Roads the course is of four years duration. As the third and fourth years of the college course are given only at the Royal Military College, cadets entering Royal Roads must proceed to that College for the final two years of the general or engineering courses. For cadets entering Collège Militaire Royal, which gives a preparatory year, the course is of five years duration. Cadets take the preparatory, first and second years at that institution and complete the final two years at the Royal Military College.

The college year is eleven months, divided into three terms: autumn, winter and summer. The months September to May are devoted to academic training supplemented by such military studies as drill and physical training. The summer term, June to mid-August, is spent in practical training at an establishment of the Service in which the cadet is enrolled. Academic requirements for admission to the first year at the Royal Military College and Royal Roads is senior matriculation (or its equivalent) in the following subjects:

English, physics, mathematics (algebra, geometry and trigonometry), chemistry and either history or a language, preferably French. French-speaking candidates having a B.A. degree from a classical college may be accepted directly into the first year at Collège Militaire Royal. For admission to the preparatory year at that institution the academic requirement is junior matriculation (or its equivalent) in English, French, algebra, geometry, physics and chemistry, although consideration is given candidates who do not possess the standing in French. Candidates from the classical colleges require at least sixth-year standing.

To be accepted, a candidate must be single, a Canadian citizen or British subject normally resident in Canada and physically fit in accordance with the medical standards of the Service in which he enrolls. The age limits for admission to the first year are between 16 and 21 years as of Jan. 1 of the year of entry; for admission to the preparatory year a cadet must have reached his 16th but not his 20th birthday on Jan. 1 of the year of entry. Personal interviews and medical examinations of candidates are carried out by Service Boards located at various centres across Canada. Senior officers representing the Services and a faculty member from the Services Colleges sit on interview boards. The interview boards base their recommendations on the physical and personal qualifications of the candidates; responsibility for final selection rests with a board appointed by the Minister of National Defence.

Since September 1954 virtually all cadets entering the Services Colleges have been required to enrol under the Regular Officer Training Plan. Under this Plan applicants accepted for entry enrol, according to their choice, as naval cadets in the Royal Canadian Navy, as officer cadets in the Canadian Army or as flight cadets in the Royal Canadian Air Force. Costs of tuition, board, lodging, uniforms, books, instruments and other essential fees are borne by the Department of National Defence, and cadets are paid at the rate of \$63 a month. On successfully completing their academic and military training, cadets are granted permanent commissions in the regular force but may, if they so wish, apply for release after three years of service following completion of academic training.

The only cadets now accepted at the Services Colleges in a reserve capacity are those who qualify for Dominion Cadetships, which are awarded by the Government in recognition of a candidate's parent having been killed, died or been severely incapacitated in the service of one of Canada's Armed Forces. A maximum of 15 Cadetships may be awarded in any one year, five in each Service. Each is valued at \$580, which covers first-year fees.

During the 1959-60 academic year, 972 cadets were in attendance at the Services Colleges—431 of them at Royal Military College, 178 at Royal Roads and 363 at Collège Militaire Royal de Saint-Jean. Of the total, 192 were enrolled in the Navy, 365 in the Army and 415 in the Air Force.

Staff Training Colleges.—The Canadian Army Staff College at Kingston, Ont., trains officers for staff appointments in peace and war. The course is 21 months in duration with a student intake every second year. Although most of the student body is composed of Canadian Army officers, officers from the other two Services and from the armies of other Commonwealth and NATO countries also attend. The system of instruction is based upon the study of précis and other references, demonstrations and lectures, indoor and outdoor exercises. Most of the work is carried on in syndicates, each under a member of the directing staff. Attention is paid to both individual and team work. Aside from purely military subjects such as the study of modern tactics, the curriculum includes national survival, research and development, world affairs and lectures by prominent guest speakers.

The National Defence College at Kingston, Ont., opened on Jan. 5, 1948, is a senior defence college providing an 11-month course of study covering the economic, political and military aspects of the defence of Canada. Senior officers and civil servants from the Armed Forces and government departments attend, as well as a few representatives from industry. An extensive lecture course is provided, with lecturers chosen from leaders in various fields in Canada, the United States, the United Kingdom and other countries.

In addition, educational tours and visits to certain parts of Canada, the United States, Europe and the Middle East give students more knowledge of conditions and influences in their own and other countries. The thirteenth course, from September 1959 to July 1960, was attended by students, three from the Royal Canadian Navy, four each from the Canadian Army and Royal Canadian Air Force, two from the Defence Research Board, one from the Department of External Affairs, one each from the Department of National Defence, the Department of Transport, the Department of National Revenue, the Department of Northern Affairs and the Royal Canadian Mounted Police and Atomic Energy Control Board of Canada. In addition, the British-American Oil Company and the Imperial Oil Company each provided one student for the course. Representation on the course from outside Canada included one member each from the Royal Navy, the British Army, the Royal Air Force and the Foreign Office of the United Kingdom, the United States Navy, the United States Army, the United States Air Force and the State Department of the United States.

The Royal Canadian Air Force Staff College at Armour Heights in Toronto, Ont., is a permanent establishment preparing officers for staff appointments in the Air Force. The course affords advanced Service education for officers normally of Wing Commander and Squadron Leader ranks, fitting them for appointments appropriate to their present ranks and preparing them to assume higher appointments. The Directing Staff selected from the Royal Canadian Air Force is augmented by an exchange officer from each of the Royal Canadian Navy, the Canadian Army, and the Royal Air Force. The student body, in addition to Royal Canadian Air Force officers, has eight representatives from the Royal Canadian Navy, and one or two from each of the Canadian Army, the Royal Air Force and the United States Air Force. The objective of the course is to assist the student to think logically and express his ideas with precision both orally and in writing, to know his Service and understand the employment of air forces, to keep abreast of scientific and technical developments that may affect the employment of air forces and to gain a perspective of national and international problems. Lecturers are drawn, when desirable, from industry, the Armed Forces, the diplomatic corps and universities. Instructional visits are made to commercial and military establishments at home and abroad.

PART II.—DEFENCE PRODUCTION*

Under the provisions of the Defence Production Act (RSC 1952, c. 62, as amended), the Department of Defence Production has exclusive authority to procure the goods and services required by the Department of National Defence and the responsibility to ensure that the necessary productive capacity and materials are available to support the defence production program. The Department also buys material for the Civil Defence program and serves as procurement agent for the Canadian Commercial Corporation, a Crown company primarily responsible for the purchase in Canada of defence goods required by other governments and of supplies needed to meet Canadian commitments under the Colombo Plan and other international agreements. Military construction is the prime responsibility of Defence Construction (1951) Limited, a Crown company reporting to Parliament through the Minister of Defence Production.

During 1959 the Department of Defence Production and Defence Construction (1951) Limited placed defence contracts on behalf of the Department of National Defence having a total net value of \$591,556,000. This was a decrease of 19.0 p.c. from the preceding year. (The net value of contracts placed takes account of the value of amendments that increased or decreased existing contracts as well as the value of new contracts issued.) With the exception of electronics and communication equipment, the major defence equipment programs registered decreases in the net value of contracts issued during the year. Contracts and amendments issued in connection with the aircraft program amounted to a net value of \$202,632,000, a decrease of one-third from 1958. This program accounted for 34.3 p.c.

* Prepared by the Economics and Statistics Branch, Department of Defence Production, Ottawa.

of the total net value of contracts placed in 1959, as compared with 41.1 p.c. in the previous year. Contracts having a net value of \$82,300,000 were placed under the electronics and communication equipment program in 1959, an increase of 12.1 p.c. over 1958. Initial commitments for new destroyer escorts accounted for a large portion of the \$25,989,000 in contracts placed for the ships program. Defence construction contracts, totalling \$67,141,000, were at about the same level as in the preceding year.

The value of expenditures on defence procurement and construction amounted to \$673,441,000 in 1959, 11.1 p.c. less than in 1958. Most of the major equipment programs registered declines. Expenditures on the ammunition and explosives program, however, increased by one-third; spending on electronics and communication equipment was almost unchanged. The largest expenditure decrease, some \$95,129,000, occurred in the aircraft program.

Of the total net value of contracts issued during 1959, 92.0 p.c. was placed in Canada as compared with 97.3 p.c. in 1958 and 91.0 p.c. in 1957. The increase in contracts placed abroad in 1959 was accounted for by new commitments in the United States involving royalty and reconfiguration agreements for Canadian production of the *CF-104 Starfighter* and the purchase of a small quantity of *Albatross* rescue aircraft. The proportion of expenditures paid directly to defence contractors in Canada in 1959 was 93.3 p.c. of total payments on defence procurement and construction, about the same as in 1958.

Aircraft.—The termination of production of the *CF-105 Arrow* aircraft and its *Iroquois* jet engine on Feb. 20, 1959, was the first major change in the aircraft program during 1959. Another major change resulted from the Government's decision to replace the *F-86 Sabre* aircraft in use by the Air Division in Europe with the *CF-104 Starfighter* reconnaissance version of the United States *F-104 Starfighter*. By the end of 1959, contracts had been placed with Canadian firms for preliminary activities in connection with production of the airframe and its *J-79-7* turbo jet engine, and licence and reconfiguration agreements had been completed with the United States manufacturers of the *F-104 Starfighter*. Discussions took place with officials of the Government of the Federal Republic of Germany on sharing the reconfiguration costs.

Delivery of the *CP-107 Argus* maritime reconnaissance aircraft and of the carrier-based anti-submarine *CS2F Tracker* aircraft continued on schedule during 1959. The *CC-106*, which is a long-range heavy transport version of the *Argus*, made a successful maiden flight towards the end of the year. Orders for a civilian version of this transport, with a hinged tail to permit straight-in loading, were received by the manufacturer from two United States airlines. Production on the *CC-109* medium-range transport was well under way. The *T-33* jet trainer program was completed during the first half of the year.

Three new programs for the Royal Canadian Air Force were undertaken in 1959. These included *Otter* general-purpose aircraft, *Albatross* search and rescue aircraft, and *H44A* helicopters for medium transport and search and rescue operations. The *Albatross* aircraft were ordered from the United States as the number required was too small for economical production in Canada, but their *R-1820-62* engines are being built in this country.

The production of *Beaver* and *Otter* general-purpose aircraft for the United States was virtually completed in 1959. Some *DHC-4 Caribou* troop transport and cargo aircraft were delivered to the United States Army for evaluation, and one was being produced for the Canadian Army. Production of *Hamilton Standard* propellers for the *CS2F Tracker* continued during the year and an additional quantity was ordered for the *Albatross*.

In the field of flight and navigation instruments, a position and homing indicator was selected by the Royal Canadian Air Force for use in the *CF-104* aircraft. This Canadian-designed instrument was also chosen by the German Air Force for its similar version of the *Starfighter*. Production continued on the navigation and tactical control (ANTAC)

system. A very accurate low-drift gyro was put into production, as was an integrator developed for use in complex systems. Delivery was maintained on the *R-Theta* navigation computer.

Electronics.—The continued production of heavy search and height-finding radars for improvement of Pinetree radar stations of both the Royal Canadian Air Force and the United States Air Force was one of the major items of the electronics and communication equipment program in 1959. An associated item was the air defence communication requirements for the eastern Ontario and southern Quebec portion of the Pinetree line. Fibreglass self-supporting radomes, to replace the original air-inflated radomes and air-pressurizing equipment were produced and installed, and production of selective aircraft identification equipment was initiated for part of the Pinetree line. Ground control approach radars were procured for use at RCAF airfields in Canada.

Consoles for the display of aircraft data at semi-automatic ground environment (SAGE) direction centres in the United States, and devices to provide an alarm signal for targets approaching the Distant Early Warning (DEW) radar line were produced in Canada. Two new types of operators' consoles for SAGE were also in the process of development for the United States Air Force. Contracts were placed for the leasing of communication facilities for both the RCAF and USAF in connection with the Pinetree and SAGE defence systems.

Search and attack sonars were a continuing production item in 1959, and an important addition to this program was the initiation of production of a Canadian-developed towed sonar. A preproduction program for a new type of sonobuoy was initiated, and interest was shown by the United States Navy in proposals to extend the life of the existing sonobuoy. A long-life moored sonobuoy was produced and tested in 1959 and considerable United States interest was also shown in this. Production of radiation monitoring equipment was initiated.

Production continued on ultra high frequency transceivers, identification, *Doppler* navigation, and instrument landing equipments. Procurement in connection with the *CF-104* aircraft program was initiated for the *NASARR* fire control radar, bomb and missile launch computers, optical sight requirements and TACAN navigation. Complex instrument, bombing, flight and anti-submarine tactical simulators were being designed and built in Canada, while a naval tactical trainer and an aircraft simulator were procured in the United Kingdom.

A major change in the responsibility for the operation and maintenance of the Mid-Canada radar line was negotiated and new contractors introduced on a cost incentive bonus plan for the first time in a major maintenance contract.

Shipbuilding.—Five destroyer escorts were completed and delivered in 1959, completing the second program of seven anti-submarine destroyer escorts known as the Restigouche class. Construction of the first of a third group of six destroyer escorts, a repeat of the Restigouche class, continued in the lead yard during the year. A contract was placed with a West Coast shipyard for construction of the hull portion of the second vessel of this class, the fitting-out of which will be done by a second West Coast yard. Contracts were placed for the majority of components for the repeat Restigouche program. Operations commenced at the central procurement agency under the supervision of the Department of Defence Production. This agency procures those items that are worked into all the vessels, allocates them to other shipyards as required, and handles the accounting for such bulk purchases.

Invitations to tender were issued to the Canadian shipbuilding industry for the construction of a naval tanker-supply vessel on a normal commercial fixed price basis. This was the first time that a major naval vessel was procured by this method. An acoustic calibration barge was completed and delivered to the Defence Research Board. There were 54 small boats under construction in 1959, varying in size from 27-foot whalers down to 14-foot dinghies. Forty-seven of these small craft were completed during the year.

Weapons and Ammunition.—Production was completed in 1959 on the third order of 105mm howitzers and on two substantial orders for long-term howitzer spares. Production of anti-submarine torpedoes for the Royal Canadian Navy was also completed but manufacture continued in order to fill a large order of these torpedoes for the Royal Navy. Further deliveries of anti-submarine mortars and of weathershields for 3"/50 calibre guns were made to the Royal Canadian Navy. Shipments of the 7.62mm C-1(FN) rifle, the heavy barrelled automatic version of this weapon, and the 9mm sub-machine gun continued to be made to the Canadian Army. Action was taken to provide for the manufacture of long-term spares for these three weapons while the production lines were still set up. Deliveries of a Canadian-designed artillery director were begun in 1959. A quantity of 3"/70 calibre twin naval guns and mounts for the new destroyer escort program was ordered from the United Kingdom.

Delivery of substantial quantities of ammunition was made to the three Armed Services. In 1959, production was completed on orders for 2.75" rocket heads, 40mm rounds, a variety of small arms ammunition, 81mm, 60mm and 2" mortar bombs, and 3"/50 calibre and 4" cartridges. Production was also completed on an initial requirement for 17" rocket components and 105mm improved performance projectiles for the Defence Research Board. Production continued throughout the year on anti-submarine fuses, practice depth charges, 7.62mm small arms ammunition of all types, several kinds of 105mm, 20 pdr. and naval rounds, 2.75" rockets, and pyrotechnics. Various rockets and 20 pdr. shot were modified to meet Army training needs. Production of a Canadian-designed anti-personnel mine, 20 pdr. target practice rounds, training aids and pyrotechnics was begun. Development was undertaken or planned for anti-tank shot, improved fuses, anti-submarine devices, and screening smoke rounds.

Construction.—Construction activity for the Canadian Armed Forces increased substantially to \$67,723,000 in 1959, as measured by payments to contractors. The largest contracts placed by Defence Construction (1951) Limited were for hangars and other improvements at Trenton, Ont., Greenwood, N.S., and Summerside, P.E.I., and for the paving of part of the Northwest Highway System. Work in connection with construction for the Bomarc missile and SAGE (semi-automatic ground environment) projects for the Royal Canadian Air Force was begun. There was a large amount of construction activity in 1959 for the United States Air Force, primarily on refuelling facilities for the Strategic Air Command and on the Ballistic Missile Early Warning System (BMEWS).

General Purchasing.—The procurement of supplies and services not normally requiring special production facilities increased slightly in 1959 to about \$176,000,000. Material purchased at headquarters included such items as clothing, footwear and leather goods, medical and dental stores, canned foods, petroleum products and hard fuels, electrical equipment and cable, furniture and furnishings, building supplies and hardware, barrack equipment and naval stores, as well as mechanical transport, construction, road maintenance and aircraft ground support equipment, together with their necessary maintenance spares and servicing. Services included aerial surveys, engineering, food catering, and certain research and development projects. In this latter field, contracts were awarded for work in such widely diversified fields as the development of fabrics that will afford protection against nuclear, bacteriological and chemical warfare; the extension of certain research and development programs with Canadian universities; and for further development of a family of light-tracked vehicles known as the Bobcat.

The Canadian Army's new role in civil defence necessitated substantially increased procurement of medical and surgical supplies and equipment, litters, floodlights, generators, ladders and demolition jacks.

The 14 district purchasing offices across Canada continued their essential role of arranging for services required by the defence establishments located in their vicinities, as well as purchasing fresh food and supplies of a local or urgent nature.

Production Sharing.—The defence production-sharing program which was initiated in the autumn of 1953 involves the integration of the defence production capabilities of Canada and the United States to bring about the most economical and efficient development and manufacture of military weapons for the defence of North America. It is an extension of the integration of Canadian and United States measures for continental air defence under the North American Air Defence (NORAD) agreement, and of the growing complexity and cost of modern weapon systems which involve exacting engineering and production capabilities for relatively short production runs.

At the beginning of 1959, production-sharing arrangements were based mainly upon four projects of mutual Canadian-United States interest: the Bomarc anti-aircraft missile, the semi-automatic ground environment (SAGE) control system, heavy radars and gap fillers for the radar lines. Activity during the first half of 1959 was directed primarily toward the development of procedures which were necessary to provide adequate opportunity for Canadian industry to participate in United States defence production. In order to establish equal opportunity for Canadian industry, however, the program was extended beyond the original four projects to cover a wide range of United States defence programs in which Canadian industry could establish its ability to compete with American industry on the basis of technical competence, delivery and price.

On this basis, a broad list of defence programs was jointly developed and specific items were agreed to by each of the three United States military departments for exemption from the Buy American Act through a revision of the Buy American regulations. The United States Armed Forces procurement regulations were amended to provide for these broadened opportunities and to permit duty-free entry from Canada of military hardware ordered by United States defence contractors for production of the items listed by the American military departments.

Revisions were also made to United States security procedures which made it possible for Canadian firms to acquire information on classified United States defence programs on the basis of their security clearance by the Canadian Government. Arrangements were made for the Canadian Government to assist as required in the administration of both United States prime and sub-contracts placed in Canada under the production-sharing program, and procedures were developed to provide for quality control inspection of American defence contracts placed in this country.

By mid-1959, the United States Government had made most of the relaxations and concessions in its military procurement regulations that were considered necessary to provide adequate opportunity for Canadian industry to participate in United States defence production. Then, an intensified effort was initiated in both Canada and the United States to ensure that government defence procurement agencies and defence contractors were familiar with the aims and objectives of defence production sharing and the procedures that had been established.

Every opportunity was taken to bring home to Canadian industry its responsibility to play an aggressive role in establishing its capabilities within the United States. Canadian firms were assisted in making direct contacts with the major United States contractors for programs of a production-sharing nature; and efforts were made to acquaint the United States Government procurement agencies and their prime contractors with the aims and objectives of the production-sharing program and with the procedures established to permit and encourage Canadian participation in that country's defence production.

Assistance was given to Canadian industry in 1959 in order to maintain diversified defence production activity in Canada, primarily in the electronics and aeronautical fields. Normally, the American contractor has an advantage because most of his preproduction and tooling costs have been written off under previous contracts. This assistance was provided to absorb part of the Canadian contractor's preproduction and tooling costs, thus putting him in a more equitable competitive position with United States contractors. Contracts valued at \$856,000 were placed to establish capacity for the production of magnetron tubes and to absorb a portion of the preproduction and tooling costs involved in the manufacture of antennae, power supplies and rigid radomes.

Canadian defence production technology can be maintained at an adequate level only by participating in the development of United States defence weapons systems as well as in sharing in their production. Consequently, emphasis was placed on a program of development-sharing with the United States as an essential component of the production-sharing effort. Development-sharing procedures were evolved to the point where specific procedures and agreed principles of control and management were established with the United States Air Force and the United States Army, and were under discussion with the United States Navy.

Financial assistance was made available to Canadian industry for a long-term defence development program aimed at maintaining and improving its scientific and technical competence so that it will be able to share to a greater extent in future United States defence-production programs. Development projects approved for such assistance in 1959 included a 500-hp. turbine engine, *Caribou* aircraft improvement, a metal frame radome and a *Doppler* navigation aid.

1.—Net Value of Total Canadian Government Defence Contracts Placed and Expenditures on such Contracts, by Program, 1958 and 1959

NOTE.—Includes all contracts placed by the Department of Defence Production and Defence Construction (1951) Limited on behalf of the Department of National Defence. *Net* value includes the value of all new contracts awarded together with the value of amendments issued which increased or decreased the commitments of existing contracts.

Program	Net Value of Total Contracts		Expenditures on Contracts	
	1958	1959	1958	1959
	\$'000	\$'000	\$'000	\$'000
Aircraft.....	300,258	202,632	341,022	245,893
Ships.....	77,140	25,989	49,937	35,056
Tank, automotive.....	10,574	7,893	11,883	7,574
Weapons.....	10,570	7,651	18,153	12,963
Ammunition and explosives.....	21,298	11,398	24,857	32,930
Electronics and communication equipment.....	73,409	82,300	99,469	99,986
Fuels and lubricants.....	53,907	57,768	46,512	40,444
Clothing and equipage.....	6,124	18,808	7,088	20,639
Construction.....	66,956	67,141	48,516	67,723
Other.....	110,316	109,976	110,289	110,234
Totals.....	730,650	591,556	757,737	673,441

PART III.—CIVIL EMERGENCY PLANNING (Civil Defence)

Towards the end of 1958 the Canadian Government initiated a survey of the civil defence situation across the country. The report on this survey was considered in the context of the total military and civilian arrangements necessary to prepare the nation for the possibility of nuclear war. The Government decided, after considering all the relevant factors, to undertake a major rearrangement of federal civil defence functions and to offer to assume directly certain responsibilities previously carried by the provinces and municipalities.

This civil defence reorganization became effective on Sept. 1, 1959. It is based on the two main principles that: civil defence should be considered a function or activity of government rather than an organization as such; and that the civil defence function should be divided into clearly defined tasks and assigned to levels of government, and at each level to those departments and agencies best able to undertake and discharge them.

At the federal level, the reorganization may be summarized briefly as follows:—

- (1) The Emergency Measures Organization is the co-ordinating agency for all civil emergency planning and for all federal/provincial planning. It is responsible for planning for continuity of government, for tasks hitherto grouped under the designation "civil defence" and not now specifically assigned to some other department of government, and for general liaison with the provinces, NATO and foreign countries on matters relating to civil emergency planning.
- (2) The Department of National Defence, more particularly the Army, has been given a primary role in survival operations and has been delegated responsibility for a substantial number of functions that are technical in character such as the complete public warning system, radiation monitoring and fallout prediction, emergency governmental communications, re-entry into damaged areas and support of local authorities in the maintenance of law and order.
- (3) The Department of National Health and Welfare (which formerly had the major responsibility for civil defence) will concentrate its attention mainly on advising and assisting provincial authorities with respect to the provision of emergency health and welfare services. This Department has retained responsibility for the operation and management of the Canadian Civil Defence College at Arrnprior, Ont.
- (4) The Royal Canadian Mounted Police has the responsibility of providing advice and assistance to provinces concerning the preservation of law and order and the control of road traffic under emergency conditions.
- (5) Other federal departments and agencies have duties that relate chiefly to carrying on essential functions or to maintaining the country's economic life under conditions of nuclear attack—the Department of Defence Production, the Department of Agriculture, the Department of Finance, the Bank of Canada, the Department of Transport, the Canadian Broadcasting Corporation and the Department of Labour in consultation with the National Employment Service of the Unemployment Insurance Commission.
- (6) What was known as Federal Civil Defence Headquarters has disappeared.

Certain emergency functions of government are simply a projection of normal peacetime provincial responsibilities, and in these fields the provinces and municipalities have more experience and knowledge of local conditions than has the Federal Government or its agencies. The following are thus considered to be proper wartime responsibilities for the provincial authorities, with such federal assistance as may prove necessary:—

- (1) *Preservation of law and order* and prevention of panic, by the use of their own police, municipal police, and special constables, with whatever support is necessary and feasible from the RCMP and the Armed Services at provincial request.
- (2) *Control of road traffic*, except in areas damaged or covered by heavy fallout, including special measures to assist in the emergency movement of people from areas likely to be attacked or affected by heavy fallout.
- (3) *Reception services*, including arrangements for providing accommodation, emergency feeding and other emergency supplies and welfare services for people who have lost or left their homes or who require assistance because of the breakdown of normal facilities.
- (4) Organization and control of *medical services*, hospitals, and public health measures.
- (5) Maintenance, clearance and repair of *highways*.
- (6) Organization of municipal and other services for the maintenance and repair of *water and sewage systems*.
- (7) Organization of municipal and other *fire-fighting services*, and control over and direction of these services in wartime except in damaged or heavy fallout areas, where fire-fighting services would be under the direction of the Army as part of the re-entry operation.
- (8) Maintenance and repair of *electrical utilities*, and the allocation of the use of electricity to meet emergency requirements.
- (9) *Training of civilians* as civil defence workers.

In outline, the federal civil emergency planning organization consists of: a Cabinet Committee on Emergency Plans to give policy guidance in all areas of civilian emergency planning for war; the Emergency Measures Organization with a headquarters staff at Ottawa and a regional office in each province; and departmental planning staffs.

EMO Regional Officers have been appointed in all ten provinces. Their function is to represent EMO in the provinces, to co-ordinate the emergency planning of federal departments and agencies in the provinces, maintain effective liaison with the provincial governments, the provincial civil defence organization and the appropriate military authorities. The Financial Assistance Programme of the Federal Government has been expanded and provided with greater resources. The Federal Government now pays up to 75 p.c. of the costs of approved provincial and municipal projects.

A booklet entitled *Your Basement Fallout Shelter* was issued by EMO in June 1960 giving instructions for the building of a "do-it-yourself" fallout shelter. Copies may be obtained from the Emergency Measures Organization, Privy Council Office, East Block, Ottawa.

The Government in 1960 announced the formation of the elements of a War Supplies Agency. This Agency, under the Department of Defence Production, will, in time of war, control the distribution and use of essential supplies, their prices and their rationing as required.

Emergency facilities for the Federal Government outside Ottawa now exist and action is under way to provide regional facilities in each of the provinces. The Minister of Transport has announced the formation within his department of an agency to be known as the Emergency National Telecommunications Organization (ENTO). This is a peacetime planning nucleus of a wartime agency to control and administer national telecommunications systems.

A Dominion/Provincial Conference on Civil Defence Arrangements was held at Ottawa in October 1959; the provinces, with one exception, were represented by provincial Cabinet Ministers and three Federal Cabinet Ministers attended. This was a continuation of a previous conference held in April 1959. Matters reviewed and discussed included evacuation and shelter policy, the role of the Army in civil defence, the Financial Assistance Programme, public information, training of civilians, and emergency communications.

Civil emergency planning development and problems within NATO, the United States and the United Kingdom are constantly under discussion and study. A national exercise, under the name of *Exercise Tocsin 1960*, was undertaken in April, the purpose of which was to practice manning of emergency government facilities, to test emergency communications and warning systems and to study problems of post-attack government at federal and provincial levels.

CHAPTER XXVII.—SOURCES OF OFFICIAL INFORMATION AND MISCELLANEOUS DATA

CONSPECTUS

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NOTE.—The interpretation of the symbols used in the tables throughout the Year Book will be found facing p. 1 of this volume.

PART 1.—SOURCES OF OFFICIAL INFORMATION

Section 1.—Federal Government Information Services

The chief source of statistical information on all phases of the economy of Canada is the Dominion Bureau of Statistics where the ten-year and five-year censuses of Canada are planned and statistical information of all kinds—federal and provincial—is centralized. Information that is not mainly statistical may be secured from the individual department concerned with the particular subject as indicated in the Directory at pp. 1202-1235. Certain government bodies and national agencies, because of the nature of their work and the appeal it has to broad sections of the population, are organized primarily as information or publicity agencies. Among these are: the Information Division, Department of External Affairs, which deals with questions about external affairs originating in Canada and with general requests originating abroad for information on Canada and Canadian affairs; the Trade Publicity Branch, Department of Trade and Commerce; the Information Services Division, Department of National Health and Welfare; the Canadian Broadcasting Corporation, and the National Film Board. The Departments of Agriculture, Northern Affairs and National Resources, and Mines and Technical Surveys, and such agencies as the National Gallery of Canada, the National Museum of Canada, the National Library, and the National Research Council, while not thus classed, are interested in the dissemination of information to a greater extent than most of the remaining government departments, though several of the latter have publicity branches or public relations divisions.

Government departments, with few exceptions, issue their own lists of reports and publications. Departments are required by statute to publish annual reports, which are tabled each year in the House of Commons by their respective Ministers. However, for the purpose of this Section, only the services of the six information agencies mentioned above are described.

Section 2 has been prepared for the purpose of presenting to the reader a directory of all sources of information, federal and provincial, thereby directing him to the proper channels from which he may draw published material relating to any particular subject.

The Dominion Bureau of Statistics.—The Dominion Bureau of Statistics was set up by statute in 1918 as a central statistical department for Canada (SC 1918, c. 43). In 1948 this statute, which had been consolidated as the Statistics Act (RSC 1927, c. 190), was repealed and replaced by the Statistics Act (RSC 1952, c. 257), subsequently amended in March 1953 (SC 1953, c. 18).

The chief aims of the Dominion Bureau of Statistics are: (1) to furnish statistical data bearing on Canada for government and administration, whether municipal, provincial, national or international; and (2) to assist in meeting the needs of non-governmental users of statistics, arising from a growing awareness of the value of statistics to business efficiency and social planning.

Inquiries.—Hundreds of individual requests for information are received each day in the Information Services Division of the Bureau, routed through the appropriate divisions and answered as expeditiously as possible. Since the field of effort from the statistical side deals with all phases of the national economy, there is scarcely a subject upon which the Bureau is not able to give some information. Nevertheless only inquiries of a statistical nature should be directed to the Dominion Bureau of Statistics.

Publications.—Dominion Bureau of Statistics reports cover all aspects of the national economy; the *Canada Year Book* and *Official Handbook Canada* constitute authoritative compendiums of information on the institutions and economic and social development of Canada.

DBS publications are listed in a catalogue of *Current Publications* and in the Queen's Printer's *Catalogue of Canadian Government Publications*. The *DBS Daily Bulletin* and *Weekly Bulletin*, available from the Bureau's Information Services Division at an annual subscription of \$1.00 each, are designed to serve persons wishing to keep closely informed on the full range of published information issued by the Bureau. Subscription orders for DBS publications or orders for single copies should be addressed to the Information Services Division, Dominion Bureau of Statistics, Ottawa, and should contain the necessary remittance in the form of a cheque or money order made payable to the Receiver General of Canada.

Information Division, Department of External Affairs.—The Information Division has two functions: to promote within Canada interest in and knowledge of international affairs, and to make Canada and Canadian policies better known and understood abroad.

To perform the first function, the Division produces and distributes various documents on external affairs—statements of government policy and reports on related developments abroad and on the work of the Department generally. The Division also answers inquiries from Canadian sources on these subjects as well as requests for information about Canada made by Diplomatic Missions at Ottawa, by Canadian posts abroad, and by individuals and organizations in other countries.

Most of the information work abroad is done, however, by officials at Canadian posts. The Information Division assists by formulating and advising on information policy abroad in an effort to ensure that this policy is related to the general objectives of Canadian foreign policy, and by producing and procuring material to keep Missions informed of developments within Canada. Journalists and others who visit Canada to write of Canadian affairs are given assistance from time to time by the Division; its responsibilities also include the co-ordination of the Government's activities in the field of cultural relations.

Trade Publicity Branch, Department of Trade and Commerce.—For details see pp. 1062-1063.

Information Services Division, Department of National Health and Welfare.—The responsibility of this Division, in co-operation with other Divisions of the Department of National Health and Welfare and provincial authorities, is the production and distribution of educational material on health, welfare and social security, for use throughout

the country. This information, issued in the English and French languages, includes books, pamphlets, periodicals, posters, exhibits, displays, radio dramatizations, press and magazine features and releases, as well as films and film-strips prepared in co-operation with the National Film Board. Books, pamphlets, posters and displays are distributed in Canada through provincial authorities. The most important periodicals published by the Division are *Canada's Health and Welfare* (monthly), *Canadian Nutrition Notes* (monthly), *Occupational Health Bulletin* (monthly), *Industrial Health Review* (semi-annually) and *Nutrition Bulletin* (annually).

Canadian Broadcasting Corporation.—Television and radio broadcasting are important mediums of information to the public along with newspapers, films and other means of communication. Broadcasting in Canada combines, in one national system, publicly owned stations and privately owned local community stations, many of which are affiliated with the Canadian Broadcasting Corporation's networks.

Since its establishment in 1936 the Canadian Broadcasting Corporation has become one of the most effective channels through which information, official and unofficial, is broadcast to the people of Canada. Radio is relatively more important in Canada than in most countries because of the widely distributed population and the number of sparsely peopled areas, and the CBC has gradually bridged the gaps with high-powered transmitters designed to serve rural as well as urban areas. The CBC has also pioneered in the development of low-powered repeater stations attached to the network lines, which serve areas unable, because of topographical conditions, to receive an adequate signal from any existing station.

News broadcasts and information programs occupy a considerable proportion of national and regional network time. All CBC schedules include news, music, drama, informative talks, children's programs, school broadcasts, public service broadcasts, sports, women's activities, etc. There is a very wide range of radio and television fare, since the CBC not only produces its own programs in the various production centres across Canada but brings in selected programs from the networks of the United States, the British Broadcasting Corporation and other national radio and television systems. The CBC maintains a bureau at London, England, and at United Nations Headquarters in New York, and is credited with having done more to inform listeners of United Nations activities than any other broadcasting system.

Through the International Service operated by the CBC on behalf of the Canadian Government, programs are broadcast over shortwave in 16 languages: English, French, German, Dutch, Danish, Norwegian, Swedish, Italian, Spanish, Portuguese, Czech, Slovak, Russian, Ukrainian, Polish and Hungarian. The CBC International Service broadcasts information abroad on life and economic conditions in Canada as part of the general information plan for promoting a better understanding of Canada in other countries. In addition to this regular shortwave program service, the International Service provides special programs for transmission by broadcasting systems in other countries by means of shortwave relays or recordings on tape or disc. A library of musical and spoken-word programs is made available to foreign broadcasting systems through processed transcriptions for wide distribution.

National Film Board.—The National Film Board produces films, film-strips and still photographs on a great variety of subjects. In keeping with its terms of reference, the Board's products are both informative and interpretative, and are widely distributed throughout the world through theatrical and television media and non-theatrical channels.

In Canada, films are seen non-theatrically by the public by means of a distribution network of more than 600 film libraries and voluntary organizations which provide local facilities for community use of films placed in circulation through sales and loans. The Board maintains a preview library of 5,000 prints from many sources; libraries are also maintained containing films on such subjects as health, medicine, sociology and industry for the use of government departments and special-interest groups.

Non-theatrically abroad, the National Film Board provides films and assistance to libraries operated by the Department of External Affairs in 54 Missions, to nine libraries operated in trade posts by the Department of Trade and Commerce, and to diplomatic Missions for use by commercial counsellors. In conjunction with the Canadian Government Travel Bureau, the Board carries out a travel film program to encourage travel in Canada by United States residents by arranging film distribution through 493 outlets in that country and by providing a special library of travel films for television use. Exchange and loan agreements are made with governmental and other organizations in many countries in order to obtain or extend distribution wherever possible. National Film Board offices abroad are located in New York and Chicago in the United States, New Delhi in India, and London, England.

The Board's library of approximately 150,000 still photographs serves government departments, commercial photographers, newspapers, periodicals and many other organizations in Canada and abroad.

Section 2.—Directory of Sources of Official Information (Federal and Provincial)

To make the best use of the Directory of Sources of Government Official Information, it is necessary that the reader understand the broad differences in function between federal and provincial departments and their separate fields of work.

Certain areas of effort, such as trade and commerce, customs and excise, currency and banking, navigation, transportation, radio, census of population and national defence are constitutionally federal affairs and on such subjects the respective departments at Ottawa are the proper sources with which to communicate. Other fields of effort such as the administration of lands and natural resources, education, roads and highways, and health and hospitals are the responsibility of the provinces but certain federal departments are also concerned with specific aspects of these subjects and, as is the case of the Dominion Bureau of Statistics, in the co-ordination and presentation of the material for Canada as a whole.

As a general guide to the public, it may be pointed out that questions relating to the actual development and administration of resources should be forwarded to the particular provinces concerned. The Government of Canada, while not administering the resources within provincial boundaries, co-operates closely with the provinces and is in a position to furnish material for Canada, especially production data on a national basis, marketing data on international, national and provincial bases, research work and experimental station data on a national basis, and also on a provincial basis from Federal Government stations located within particular provinces. In agriculture, for instance, data on the breeding of livestock and the improvement of strains, on agricultural marketing and on crop yields are cases in point; in forestry, questions of forest research, forest fire protection and reforestation offer good examples. Inquiries directed to federal sources for information not of a statistical nature should as a general rule be sent to the individual departments listed in the Directory; inquiries for information of a statistical nature should be addressed to the Information Services Division, Dominion Bureau of Statistics, Ottawa.

Sale of Official Publications.—Under the provisions of the Public Printing and Stationery Act, the Queen's Printer and Controller of Stationery, Ottawa, has charge of the sale of all official publications of Parliament and the Government of Canada that are issued to the public, as well as of the free distribution of all public documents and papers to persons and institutions (libraries) entitled by statutory provisions to receive them. The Dominion Bureau of Statistics acts as the agent of the Queen's Printer with respect to the sale of DBS publications and issues an annual catalogue entitled *Current Publications*.

The regulations relating to the distribution and sale of government publications made in accordance with the provisions of Sect. 7 of the Public Printing and Stationery Act and Sect. 7 (e) of the Financial Administration Act were brought up to date and approved by Treasury Board on Mar. 31, 1955.

In compliance with these regulations, the Queen's Printer and Controller of Stationery issues the *Daily Checklist of Government Publications* which records for the information of the public service, libraries, etc., all Federal Government publications immediately upon release. Those authorized by law or regulation to receive free copies of government publications receive the *Daily Checklist* without charge; others desiring the service may purchase an annual subscription to be forwarded daily or in weekly batches as requested.

The Queen's Printer and Controller of Stationery also issues the *Monthly Catalogue of Canadian Government Publications*, a comprehensive listing of all official publications, public documents and papers not of a confidential nature published at government expense, an *Annual Catalogue* (in January) listing all publications issued during the previous year, as well as sectional catalogues and selected titles bulletins advertising new government publications.

Most provincial government publications may be obtained from the Queen's Printer of the province concerned. Inquiries should be addressed to the provincial capital cities:—

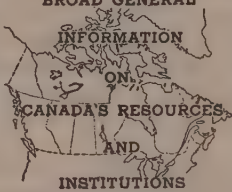
Newfoundland.....	St. John's	Ontario.....	Toronto
Prince Edward Island....	Charlottetown	Manitoba.....	Winnipeg
Nova Scotia.....	Halifax	Saskatchewan.....	Regina
New Brunswick.....	Fredericton	Alberta.....	Edmonton
Quebec.....	Quebec	British Columbia.....	Victoria.

Inquiries about the Yukon and Northwest Territories should be addressed to the Northern Administration Branch, Department of Northern Affairs and National Resources, Ottawa.

(Detailed Directory of Sources of Official Information follows, pp. 1204-1235.)

DIRECTORY OF SOURCES OF OFFICIAL INFORMATION

NOTE.—In the "Federal Data" column, the major source of information on each subject is given first; other sources follow in alphabetical order, with the exception of the National Film Board and the Dominion Bureau of Statistics which appear at the end of each listing with which they are concerned, except where they are the major source.

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Agriculture Information Division Dept. of External Affairs (general requests originating in all countries outside Canada) Dept. of Fisheries Information and Educational Service Dept. of Mines and Technical Surveys Editorial and Information Division Mineral Resources Division Dept. of National Health and Welfare Information Services Dept. of Northern Affairs and National Resources Editorial and Information Division Dept. of Trade and Commerce Trade Publicity Branch National Film Board (films, filmstrips, photographs on all subjects) Dominion Bureau of Statistics	BROAD GENERAL INFORMATION  CANADA'S RESOURCES AND INSTITUTIONS	For broad general information in regard to particular provinces, application should be made to: Nfld., Dept. of Provincial Affairs; P.E.I., Tourist and Information Bureau; N.S., Dept. of Provincial Secretary; N.B., Dept. of Industry and Development or Dept. of Provincial Secretary-Treasurer or N.B. Travel Bureau; Que., Dept. of Trade and Commerce, Bureau of Statistics; Ont., Dept. of Economics or Dept. of Travel and Publicity; Man., Dept. of Industry and Commerce or Dept. of Provincial Secretary; Sask., Dept. of Industry and Information or Executive Council, or Economic Advisory and Planning Board; Alta., Publicity Bureau, Dept. of Economic Affairs; B.C., Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics.
Dept. of Agriculture Information Division Central Mortgage and Housing Corporation (mortgage loans for new farm houses) Dept. of Citizenship and Immigration Information Division Dept. of Finance (farm improvement loans) Dept. of Labour (farm workers) Dept. of Northern Affairs and National Resources (Yukon and N.W.T.) Dept. of Trade and Commerce Agricultural and Fisheries Branch Dept. of Veterans Affairs (veterans) Farm Credit Corporation (mortgage loans) National Film Board Dominion Bureau of Statistics	AGRICULTURE General and Farming	Nfld.—Dept. of Mines and Resources P.E.I., N.S., N.B., Sask.—Depts. of Agriculture Que.—Dept. of Agriculture, Information and Research Branch Dept. of Trade and Commerce Bureau of Statistics Ont.—Dept. of Agriculture, Farm Economics and Statistics Branch and Information Branch Man.—Dept. of Agriculture and Conservation, Publications Branch and Extension Service Alta.—Dept. of Agriculture B.C.—Dept. of Agriculture, Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics Dominion Bureau of Statistics (summaries of provincial data)
Dept. of Northern Affairs and National Resources Editorial and Information Branch Northern Administration Branch Dept. of Citizenship and Immigration Information Division (Indians) Dept. of Mines and Technical Surveys Editorial and Information Division Dominion Observatories Geological Survey of Canada Surveys and Mapping Branch Geographical Branch Dept. of National Defence Director of Public Relations Defence Research Board Dept. of National Health and Welfare (health services) Dept. of Public Works Northern Construction Division Dept. of Transport (airports, weather stations, navigation) Fisheries Research Board of Canada National Research Council Division of Building Research (permafrost, buildings in the North, snow and ice) National Film Board	ARCTIC	Sask.—Dept. of Natural Resources, Northern Administration District

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Mines and Technical Surveys Dominion Astrophysical Observatory, Victoria, B.C. Dominion Observatory, Ottawa, Ont. National Research Council Radio and Electrical Engineering Division (radio astronomy)	ASTRONOMY	Que.:—Office of Provincial Secretary Quebec Society of Astronomy Sask.:—University of Saskatchewan, Saskatoon Alta.:—University of Alberta, Edmonton
Atomic Energy of Canada Limited (research studies, sale of radio-isotopes) Atomic Energy Control Board (policy, regulations) Dept. of Mines and Technical Surveys Geological Survey of Canada Mines Branch Eldorado Mining and Refining Limited	ATOMIC ENERGY	Ont.:—Dept. of Energy Resources The Hydro-Electric Power Commission of Ontario Sask.:—University of Saskatchewan, Saskatoon Alta.:—Alberta Research Council, University of Alberta Campus, Edmonton B.C.:—University of British Columbia
Dept. of Transport Civil Aviation Branch (civil aviation control; airmen and aircraft licensing; provision of airports and air navigation facilities) Economics Policy Branch Dept. of Defence Production Aircraft Branch Dept. of Mines and Technical Surveys Legal Surveys and Aeronautical Charts Division Dept. of National Defence Directorate of Public Relations (RCAF) Dept. of National Health and Welfare Civil Aviation Medicine Division National Research Council National Aeronautical Establishment Trans-Canada Air Lines National Film Board Dominion Bureau of Statistics	AVIATION	Que.:—Quebec Government Air Services Ont.:—Dept. of Lands and Forests, Air Service Man.:—Manitoba Government Air Services Sask.:—Saskatchewan Government Airways
Bank of Canada Industrial Development Bank Dept. of Finance Dept. of Insurance (for trust and loan business; administrators also the Small Loans Act) Central Mortgage and Housing Corporation Post Office Department, Savings Branch Dominion Bureau of Statistics	BANKING Trust and Loan Companies	Nfld.:—Dept. of Finance Supreme Court Registry of Deeds P.E.I., N.S.:—Dept. of Provincial Secretary N.B.:—Dept. of Provincial Secretary-Treasurer Que.:—Dept. of Finance, Insurance Branch Dept. of Trade and Commerce, Bureau of Statistics Ont.:—Province of Ontario Savings Office Attorney-General Dept. of Insurance Man.:—Dept. of Provincial Secretary Manitoba Development Fund Sask.:—Provincial Secretary, Registrar of Securities Dept. of Co-operation and Co-operative Development, Credit Union Services Alta.:—Government of Alberta Treasury Branches B.C.:—Dept. of Finance, Inspector of Trust Companies
Dept. of Justice Superintendent of Bankruptcy Dominion Bureau of Statistics	BANKRUPTCY	P.E.I.:—Dept. of Attorney General Man.:—Dept. of Provincial Secretary Sask.:—Provincial Secretary

Sources for Federal Data	Subject	Sources for Provincial Data
<p>National Library (information re books in libraries of federal departments and other Canadian libraries; information on current Canadian publications)</p> <p>Department of Public Printing and Stationery (information re prices, availability or otherwise, of all publications not confidential in nature, issued by Parliament and the various departments and agencies of the Government of Canada)</p> <p>Dominion Bureau of Statistics, Information Services Division (for statistical publications)</p>	BIBLIOGRAPHY: BOOKS	<p>Nfld.:—Dept. of Education Public Libraries Board</p> <p>P.E.I.:—Dept. of Education Superintendent of Libraries and Director of Adult Education Legislative Librarian</p> <p>N.S.:—Dept. of Education</p> <p>N.B., Man.:—Dept. of Education Provincial Librarian</p> <p>Que.:—Office of Provincial Secretary Provincial Archives Provincial Library</p> <p>Ont.:—Dept. of Education, Provincial Library Service The Legislative Library</p> <p>Sask.:—Provincial Library Legislative Library</p> <p>Alta.:—Dept. of Provincial Secretary Library Board Provincial Library and Archives</p> <p>B.C.:—Dept. of Education Provincial Library and Archives Public Library Commission</p>
<p>Dept. of National Health and Welfare</p> <p>Dept. of Northern Affairs and National Resources (Yukon and N.W.T.)</p>	BIRTHS See "Vital Statistics"	<p>Sources same as for "Old Age Assistance", excepting:</p> <p>P.E.I.:—Director of Blind Persons Allowances, Dept. of Welfare</p> <p>Alta.:—Dept. of Public Welfare</p> <p>B.C.:—Blind Persons Allowances Board</p>
<p>Central Mortgage and Housing Corporation (NHA financing, house designs, apartment building standards)</p> <p>Canadian Government Specifications Board</p> <p>Canadian Standards Association</p> <p>Dept. of Defence Production Defence Construction (1951) Limited</p> <p>Dept. of Finance (Farm Improvement Loans Act)</p> <p>Dept. of National Health and Welfare Hospital Design Division</p> <p>Dept. of Northern Affairs and National Resources National Parks Branch Northern Administration Branch Northern Canada Power Commission</p> <p>Dept. of Public Works Building Construction Branch Chief Architect and Information Services</p> <p>Dept. of Transport Air Services Construction Branch (airport terminal buildings, etc.)</p> <p>Dept. of Veterans Affairs (Soldier Settlement and Veterans' Land Act)</p> <p>Farm Credit Corporation</p> <p>National Research Council Division of Building Research (construction materials, building codes and practice, soil and snow mechanics, housing standards)</p> <p>Dominion Bureau of Statistics</p>	BLINDNESS ALLOWANCES	<p>Nfld., N.B.:—Dept. of Public Works</p> <p>P.E.I.:—Dept. of Industry and Natural Resources</p> <p>N.S.:—Dept. of Trade and Industry</p> <p>Que.:—Farm Credit Bureau, Family Housing Division Dept. of Trade and Commerce, Bureau of Statistics</p> <p>Ont.:—Dept. of Labour, Factory Inspection Branch Dept. of Planning and Development, Housing Branch Dept. of Public Works Dept. of Municipal Affairs, Community Planning Branch</p> <p>Man., Sask.:—Dept. of Labour</p> <p>Alta.:—Dept. of Industry and Development, Provincial Bureau of Statistics Dept. of Labour</p> <p>B.C.:—Dept. of Finance, Housing Commissioner Dept. of Labour, Factory Inspection Branch Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics</p>
	BROADCASTING See "Radio"	
	BUILDING CONSTRUCTION	

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Transport Marine Services (secondary canals) St. Lawrence Seaway Authority (St. Lawrence—Great Lakes canals) National Research Council Division of Mechanical Engineer- ing Dominion Bureau of Statistics	CANALS	
Dept. of Trade and Commerce Commodities Branch Dominion Bureau of Statistics	CHEMICALS	{ Ont.:—Ontario Research Founda- tion
Dept. of Citizenship and Immigration Citizenship Branch Information Division National Film Board	CITIZENSHIP See also "Population"	{ Ont.:—Dept. of Provincial Secre- tary, Citizenship Branch
	CIVIL AVIATION See "Aviation"	
Dept. of National Defence Directorate of Survival Operations and Plans Dept. of Defence Production Emergency Supply Planning Branch Dept. of National Health and Wel- fare Emergency Health Services Emergency Welfare Services Royal Canadian Mounted Police	CIVIL DEFENCE	(Nfld.:—Dept. of Provincial Affairs P.E.I.:—Dept. of Provincial Secre- tary N.S., N.B.:—Depts. of Municipal Affairs Que.:—Dept. of Social Welfare Ont.:—Dept. of Planning and Development, Civil Defence Branch Man.:—Dept. of Industry and Com- merce, Civil Defence Co-ordin- ator Sask.:—Dept. of Social Welfare, Director of Civil Defence Alta.:—Dept. of Agriculture B.C.:—Dept. of Provincial Secre- tary, Provincial Co-ordinator
Dept. of Transport Meteorological Branch, Toronto National Research Council Division of Building Research, (Climatological Atlas of Canada, National Building Code)	CLIMATE	(Que.:—Dept. of Lands and Forests, Meteorological Bureau Dept. of Trade and Commerce, Bureau of Statistics Ont.:—Dept. of Agriculture, Farm Economics and Statistics Branch B.C.:—Dept. of Agriculture
Dept. of Mines and Technical Sur- veys Geological Survey of Canada Mines Branch Mineral Resources Division Dominion Coal Board Dominion Bureau of Statistics	COAL	(N.S., Que., Ont.:—Depts. of Mines N.B.:—Dept. of Lands and Mines Man.:—Dept. of Mines and Natural Resources, Mines Branch Sask.:—Dept. of Mineral Resources Alta.:—Dept. of Mines and Minerals Alberta Research Council B.C.:—Dept. of Mines and Petro- leum Resources
Dept. of Justice Director of Investigation and Research Restrictive Trade Practices Com- mission	COMBINES	

Sources for Federal Data	Subject	Sources for Provincial Data
<p>Dept. of Transport Telecommunications Branch— radio communications; aviation radio and marine radio; Govern- ment telegraph and telephone services (telegraph and telephone services in remote areas)</p> <p>Board of Transport Commissioners (regulation of certain telegraph and telephone companies)</p> <p>Canadian Broadcasting Corporation (network broadcasting, televi- sion, and international short- wave service)</p> <p>Canadian Overseas Telecommunica- tion Corporation</p> <p>Dept. of Northern Affairs and National Resources Northern Administration Branch (wireless communication in the Yukon and N.W.T.)</p> <p>National Parks Branch (telephones in National Parks)</p> <p>Dept. of Trade and Commerce Transportation and Trade Services Division</p> <p>Dominion Bureau of Statistics</p>	<p>COM- MUNICATIONS For Post Office and Mail See "Post Office"</p>	<p>Nfld.:—Dept. of Economic Develop- ment</p> <p>P.E.I.:—Tourist and Information Bureau</p> <p>N.S.:—Board of Commissioners of Public Utilities</p> <p>N.B.:—Travel Bureau</p> <p>Que.:—Dept. of Transportation and Communications</p> <p>Ont.:—Ontario Telephone Authority Ontario Provincial Police, Radio Communications Branch</p> <p>Man.:—Manitoba Telephone System</p> <p>Sask.:—Dept. of Telephones Saskatchewan Government Tele- phones</p> <p>Alta.:—Alberta Government Tele- phones</p> <p>B.C.:—Dept. of Commercial Trans- port RCMP Provincial Headquarters</p>
<p>Central Mortgage and Housing Corporation</p> <p>Dept. of National Health and Welfare (social welfare and recreation)</p> <p>Dept. of Northern Affairs and National Resources Northern Administration Branch National Capital Commission Information Division (general in- formation on the Plan for the National Capital of Canada)</p> <p>National Film Board</p>	<p>COMMUNITY PLANNING</p>	<p>Nfld.:—Dept. of Municipal Affairs and Supply</p> <p>P.E.I.:—Dept. of Industry and Natural Resources Dept. of Education, Physical Fitness Division</p> <p>N.S.:—Dept. of Municipal Affairs Dept. of Education, Physical Fitness Division</p> <p>N.B.:—Dept. of Education, Physical Education and Recreational Branch</p> <p>Dept. of Municipal Affairs</p> <p>Que.:—Dept. of Municipal Affairs</p> <p>Ont.:—Dept. of Municipal Affairs, Community Planning Branch Dept. of Education, Community Programs Branch</p> <p>Man.:—Depts. of Municipal Com- missioner and Mines and Natural Resources, Surveys Branch</p> <p>Dept. of Health and Public Welfare, Physical Fitness and Recreation Division</p> <p>Dept. of Industry and Commerce</p> <p>Sask.:—Dept. of Municipal Affairs, Community Planning Branch Executive Council, Economic Ad- visory and Planning Board Centre for Community Studies, University of Saskatchewan, Saskatoon</p> <p>Alta.:—Dept. of Municipal Affairs, Town and Rural Planning Branch</p> <p>B.C.:—Dept. of Industrial Develop- ment, Trade, and Commerce, Bureau of Economics and Sta- tistics Dept. of Municipal Affairs, Re- gional Planning Division Dept. of Education, Community Programs Branch Lower Mainland Regional Plan- ning Board</p>

Sources for Federal Data	Subject	Sources for Provincial Data
<p>Dept. of Northern Affairs and National Resources National Parks Branch, Canadian Wildlife Service Northern Administration Branch Forestry Branch Resources for Tomorrow Conference Secretariat Dept. of Agriculture Information Division Economics Division Prairie Farm Rehabilitation Administration Maritime Marshlands Rehabilitation Administration Dept. of Fisheries Information and Educational Service National Capital Commission National Film Board</p>	<p>CONSERVATION</p>	<p>Nfld.:—Dept. of Mines and Resources P.E.I.:—Dept. of Industry and Natural Resources N.S., Alta.:—Depts. of Lands and Forests N.B.:—Dept. of Lands and Mines Que.:—Dept. of Lands and Forests Dept. of Game and Fisheries Dept. of Hydraulic Resources Ont.:—Dept. of Lands and Forests Dept. of Planning and Development, Conservation Branch Ontario Agricultural College, Guelph Man.:—Dept. of Mines and Natural Resources Sask.:—Dept. of Natural Resources Dept. of Agriculture, Conservation and Development Branch B.C.:—Dept. of Lands and Forests Dept. of Recreation and Conservation</p>
<p>Privy Council Office Dept. of Secretary of State Dept. of Justice Public Archives</p>	<p>CONSTITUTION</p>	<p>All Provinces except B.C.:—Depts. of Attorney General B.C.:—Provincial Secretary</p>
<p>Dominion Bureau of Statistics</p>	<p>CONSUMER PRICE INDEX See also "Cost of Living"</p>	
<p>Dept. of Agriculture Economics Division Central Mortgage and Housing Corporation (mortgage-lending activities) Dept. of Fisheries Information and Educational Service Dept. of Insurance Dept. of Northern Affairs and National Resources Northern Administration Branch (Eskimo co-operatives) Dept. of Secretary of State Companies Division</p>	<p>CO-OPERATIVES (including Credit Unions)</p>	<p>Nfld.:—Dept. of Mines and Resources P.E.I.:—Dept. of Provincial Secretary N.S.:—Dept. of Provincial Secretary N.B.:—Dept. of Agriculture Que.:—Dept. of Agriculture Dept. of Trade and Commerce, Bureau of Statistics Ont.:—Dept. of Agriculture, Markets Branch Dept. of Provincial Secretary Dept. of Insurance Man.:—Dept. of Agriculture and Conservation, Co-operative Services Branch Sask.:—Dept. of Co-operation and Co-operative Development Alta.:—Dept. of Industry and Development B.C.:—Attorney-General's Dept., Registrar of Companies</p>
<p>Dominion Bureau of Statistics (wholesale and retail prices and consumer price index)</p>	<p>COST OF LIVING</p>	<p>Nfld.:—Dept. of Municipal Affairs and Supply Ont.:—Dept. of Economics, Economic Statistics Branch Sask.:—Dept. of Labour Alta.:—Dept. of Industry and Development, Provincial Bureau of Statistics B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics</p>

Sources for Federal Data	Subject	Sources for Provincial Data
Canada Council Dept. of Citizenship and Immigration Information Division (Indians and immigrants) Dept. of National Health and Welfare Dept. of Northern Affairs and National Resources National Parks Branch National Museum of Canada Northern Administration Branch Dept. of Trade and Commerce Commodities Branch Dept. of Veterans Affairs (veterans only) National Gallery of Canada (films, reference library) Public Archives National Film Board	<div>CREATIVE ARTS AND HANDICRAFTS</div>	Nfld.:—Dept. of Education P.E.I.:—Dept. of Provincial Secretary, Tourist and Information Branch Dept. of Education, Physical Fitness Division N.S.:—Dept. of Trade and Industry, Handicrafts Division Nova Scotia College of Art Dept. of Education, Physical Fitness Division N.B.:—Dept. of Industry and Development, Handicraft Division The New Brunswick Museum Dept. of Education, Physical Education and Recreation Branch Que.:—Dept. of Agriculture (rural handicrafts) Office of Provincial Secretary Dept. of Trade and Commerce Ont.:—Dept. of Education, Community Programs Branch Dept. of Agriculture, Home Economics Service Man.:—Dept. of Agriculture and Conservation (handicrafts) Dept. of Health and Public Welfare, Physical Fitness and Recreation Division Sask.:—Dept. of Education, Adult Education Division and Fitness and Recreation Division Saskatchewan Arts Board Alta.:—Dept. of Provincial Secretary (cultural activities) B.C.:—Provincial Museum (Indian handicrafts) Dept. of Education, Community Programs Branch Dept. of Industrial Development, Trade, and Commerce
Dept. of Justice Clemency Branch The Penitentiary Commission National Parole Board Dept. of National Health and Welfare Research and Statistics Division National Film Board Dominion Bureau of Statistics	<div>CRIME AND DELINQUENCY</div>	(All Provinces:—Depts. of Attorney General <i>Additional:—Nfld., N.S., Alta.:—</i> Depts. of Public Welfare P.E.I.:—Dept. of Welfare Dept. of Attorney General Que.:—Dept. of Social Welfare Dept. of Youth Dept. of Trade and Commerce, Bureau of Statistics Ont.:—Dept. of Reform Institutions Man.:—Dept. of Health and Public Welfare Sask.:—Dept. of Social Welfare B.C.:—Dept. of Social Welfare
See pp. 134-141 of this volume for a list of Crown corporations giving the functions of each and the Cabinet Minister through which each reports to Parliament.	<div>CROWN CORPORATIONS</div>	(For information with regard to individual Crown corporations apply as follows:— Nfld.:—Dept. of Economic Development P.E.I.:—Dept. of Industry and Natural Resources N.S.:—Dept. of Trade and Industry Ont.:—Dept. of Provincial Secretary Man.:—Treasury Dept. Sask.:—Government Finance Office Alta.:—Dept. of Industry and Development B.C.:—Attorney General's Dept.
Bank of Canada Dept. of Finance Royal Canadian Mint	<div>CURRENCY</div>	

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Agriculture Animal Research Institute Dairy Technology Research Institute Dairy Products Division Dept. of Trade and Commerce Agriculture and Fisheries Branch National Film Board Dominion Bureau of Statistics	DAIRYING	Nfld.:—Dept. of Mines and Resources P.E.I., N.S.:—Depts. of Agriculture N.B., Ont., Alta., B.C.:—Depts. of Agriculture, Dairy Branches (also Milk Industry Board of Ont. and Milk Control Board for B.C.) Que.:—Dept. of Agriculture, Dairy Commission Dept. of Trade and Commerce, Bureau of Statistics Man.:—Dept. of Agriculture and Conservation, Milk Control Board, Dairy Branch Sask.:—Dept. of Agriculture, Animal Industry Branch Milk Control Board
	DEATHS See "Vital Statistics"	
Dept. of National Defence Director of Public Relations Directorate of Naval Information Directorate of Public Relations (Army) Directorate of Public Relations (RCAF) Defence Research Board Dept. of Defence Production Canadian Commercial Corporation Defence Construction (1951) Limited Canadian Arsenals Limited Dept. of External Affairs (NATO) Privy Council Office Emergency Measures Organization	DEFENCE See also "Civil Defence"	
Dept. of Defence Production	DEFENCE PRODUCTION	
Dept. of National Health and Welfare Dept. of Veterans Affairs (war disabled veterans)	DISABLED PERSONS ALLOWANCES	Nfld.:—The Old Age Assistance Board P.E.I.:—Director of Disabled Persons Allowances, Dept. of Welfare N.B.:—Director of Disabled Persons Allowances N.S.:—Director of Old Age Assistance Que.:—Quebec Social Allowances Commission Ont.:—Dept. of Public Welfare, Welfare Allowance Branch Man.:—The Old Age Assistance and Blind Persons' Allowances Board Sask.:—Dept. of Social Welfare and Rehabilitation, Director of Public Assistance Alta.:—Dept. of Public Welfare B.C.:—The Disabled Persons Allowances Board

Sources for Federal Data	Subject	Sources for Provincial Data
Bank of Canada Central Mortgage and Housing Corporation Dept. of Agriculture Economics Division Dept. of Citizenship and Immigration Canadian Citizenship Branch Dept. of Defence Production Economics and Statistics Branch Dept. of Fisheries Economics Service Dept. of Labour Economics and Research Branch Legislation Branch Dept. of Mines and Technical Surveys Mineral Resources Division Dept. of National Health and Welfare Research and Statistics Division Dept. of Northern Affairs and National Resources (forest and water resources and resources of Yukon and Northwest Territories) Administration Services Forestry Branch Northern Administration Branch Water Resources Branch Dept. of Public Works Economic Studies Branch Dept. of Trade and Commerce Economics Branch Dept. of Transport Economics Policy Branch Fisheries Research Board Public Archives (early data) Dominion Bureau of Statistics	<div>ECONOMIC AND SOCIAL RESEARCH</div>	Nfld.:—Dept. of Economic Development P.E.I.:—Dept. of Industry and Natural Resources N.S.:—Dept. of Trade and Industry Nova Scotia Research Foundation N.B.:—Dept. of Industry and Development Que.:—Dept. of Trade and Commerce, Economic Research Bureau, Bureau of Statistics, Industrial Commission Branch Ont.:—Dept. of Economics Dept. of Agriculture, Farm Economics and Statistics Branch Dept. of Municipal Affairs, Community Planning Branch Alcoholism Research Foundation Man.:—Dept. of Industry and Commerce Sask.:—Executive Council, Economic Advisory and Planning Board, Dept. of Industry and Information Government Finance Office Dept. of Co-operation and Co-operative Development, Research and Statistical Division Centre for Community Studies, University of Saskatchewan, Saskatoon Alta.:—Dept. of Industry and Development B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Dominion Bureau of Statistics Canada Council Canadian Broadcasting Corporation (school broadcasts) Dept. of Citizenship and Immigration Citizenship Branch (Immigrants) Information Division (Indians) Dept. of Finance (university grants) Dept. of Fisheries Information and Educational Service Dept. of Labour Canadian Vocational Training Branch Dept. of National Defence Director of Education (service dependents schools) Dept. of National Health and Welfare Dept. of Northern Affairs and National Resources Northern Administration Branch (N.W.T.) Dept. of Veterans Affairs (veterans and children of war dead) National Gallery of Canada (school broadcasts, lectures on art)	<div>EDUCATION</div> <div>See also "Motion Pictures" and "Photographic Material"</div>	All Provinces:—Depts. of Education (technical, visual, audio and all other phases of education) Additional:—Alta.:—Dept. of Labour, Apprenticeship Board
Chief Electoral Office	<div>ELECTIONS</div>	Nfld.:—Dept. of Provincial Affairs P.E.I., N.S.:—Depts. of Provincial Secretary N.B.:—Dept. of Provincial Secretary-Treasurer Que.:—Chief Returning-Officer Ont.:—Attorney-General's Dept., Chief Election Officer Man., B.C.:—Chief Electoral Officers Sask., Alta.:—Clerks of the Executive Councils

Sources for Federal Data	Subject	Sources for Provincial Data
<p>Dept. of Northern Affairs and National Resources Water Resources Branch Northern Canada Power Commission Dept. of Trade and Commerce Energy Studies Branch National Research Council Radio and Electrical Engineering Division National Film Board Dominion Bureau of Statistics</p>	ELECTRIC POWER	<p>Nfld.:—Dept. of Economic Development Power Commission P.E.I.:—Public Utility Commission N.S., Alta.:—Power Commissions N.B.:—New Brunswick Electric Power Commission Que.:—Hydro-Electric Commission Dept. of Hydraulic Resources Dept. of Agriculture, Rural Electrification Bureau Ont.:—Dept. of Energy Resources The Hydro-Electric Power Commission of Ontario Man.:—Manitoba Hydro Electric Board Dept. of Public Utilities Sask.:—Saskatchewan Power Corporation B.C.:—Dept. of Lands and Forests British Columbia Power Commission Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics</p>
<p>Dept. of Labour Economics and Research Branch Civil Service Commission (opportunities for, and conditions of, employment in the Federal Civil Service) Dept. of Citizenship and Immigration Information Division (immigrants) National Employment Service Dominion Bureau of Statistics</p>	EMPLOYMENT	<p>All Provinces:—Depts. of Agriculture (farm labour) Additional:—Nfld., N.S., Man., Sask.:—Depts. of Labour Que.:—Dept. of Labour, Provincial Employment Bureau Ont.:—Dept. of Labour Dept. of Economics, Economic Statistics Branch Civil Service Commission Alta.:—Dept. of Labour Dept. of Industry and Development B.C.:—Dept. of Labour Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics</p>
<p>Dept. of Northern Affairs and National Resources Northern Administration Branch (education, welfare, handicrafts, livelihood) National Museum of Canada (historical and archaeological information, handicrafts) Canadian Wildlife Service (wildlife in Canada's North) Dept. of National Health and Welfare (health and hospital services) Royal Canadian Mounted Police (field duties)</p>	ESKIMOS	<p>Nfld.:—Dept. of Public Welfare, Division of Northern Labrador Affairs</p>
<p>Dept. of Trade and Commerce Canadian Government Exhibition Commission Dept. of Agriculture Information Division Dept. of Fisheries Information and Educational Service Dept. of Mines and Technical Surveys Editorial and Information Division Mineral Resources Division Dept. of National Health and Welfare Information Division Dept. of Northern Affairs and National Resources Editorial and Information Division Canadian Government Travel Bureau (sportsmen's shows) National Capital Commission Plan for the National Capital of Canada (exhibits and information) Industrial Design Centre National Gallery of Canada (paintings, etc.) National Film Board (films, photographs)</p>	EXHIBITIONS	<p>Nfld.:—Dept. of Provincial Affairs P.E.I., N.S., N.B.:—Depts. of Agriculture Que.:—Dept. of Agriculture Dept. of Trade and Commerce Office of Provincial Secretary Ont.:—Most Ontario Departments organize exhibitions Man.:—Dept. of Agriculture and Conservation, Extension Service Dept. of Industry and Commerce Sask.:—Dept. of Agriculture Dept. of Industry and Information Alta.:—Dept. of Provincial Secretary Dept. of Agriculture B.C.:—Dept. of Agriculture Dept. of Industrial Development Trade, and Commerce</p>

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Defence Production Ammunition Branch Canadian Arsenal Limited Dept. of Mines and Technical Surveys Explosives Division Mines Branch (Explosives Laboratory)	EXPLOSIVES	Alta.:—Dept. of Mines and Minerals B.C.:—Dept. of Mines and Petroleum Resources
Dept. of External Affairs	EXTERNAL AFFAIRS	
Dept. of National Health and Welfare Dept. of Citizenship and Immigration (assistance to families entering Canada not yet eligible for family allowances)	FAMILY ALLOWANCES	Alta.:—Dept. of Public Welfare
Dept. of Agriculture Research Branch Plant Products Division Dept. of Trade and Commerce Agriculture and Fisheries Branch National Film Board Dominion Bureau of Statistics	FIELD CROPS	Nfld.:—Dept. of Mines and Resources P.E.I., N.S., N.B.:—Depts. of Agriculture Que.:—Dept. of Agriculture Dept. of Trade and Commerce,* Bureau of Statistics Ont., Alta., B.C.:—Depts. of Agriculture, Field Crops Branch Man.:—Dept. of Agriculture and Conservation Sask.:—Dept. of Agriculture, Plant Industry Branch
Dept. of Finance Bank of Canada Dominion Bureau of Statistics	FINANCE See also "Taxation"	Nfld., B.C.:—Depts. of Finance P.E.I., Sask.:—Provincial Treasurer N.S.:—Dept. of Provincial Treasurer N.B.:—Dept. of Provincial Secretary-Treasurer Que.:—Dept. of Finance Dept. of Trade and Commerce, Bureau of Statistics Ont.:—Treasury Dept. Dept. of Economics Man., Alta.:—Provincial Treasury Depts.
Dept. of Northern Affairs and National Resources Forestry Branch (federal interests) National Parks Branch Northern Administration Branch Board of Transport Commissioners (forest-fire protection along railway lines) Dept. of Public Works Fire Prevention Branch (fire loss statistics) National Research Council Division of Building Research, Fire Research Section National Film Board (films, filmstrips, photographs, in relation to government prevention and conservation programs)	FIRE PREVENTION	All Provinces:—Provincial Fire Marshals (for urban and rural fire losses) Additional:—Nfld.:—Dept. of Mines and Resources P.E.I.:—Dept. of Industry and Natural Resources N.S., Alta., B.C.:—Depts. of Lands and Forests N.B.:—Dept. of Lands and Mines Que.:—Dept. of Lands and Forests Forest Protection Service Dept. of Public Works, Fire Commissioner Ont.:—Dept. of Lands and Forests, Forest Protection Division Dept. of Attorney-General, Office of the Fire Marshal Man.:—Dept. of Mines and Natural Resources Dept. of Labour, Fire Commissioner Sask.:—Dept. of Natural Resources Dept. of Labour, Fire Commissioner Dept. of Social Welfare, Civil Defence Branch

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Fisheries Information and Educational Service Fisheries Research Board of Canada Dept. of Finance Fisherman's Improvement Loans Dept. of Northern Affairs and National Resources Northern Administration Branch (Eskimo fishing co-operatives) Dept. of Trade and Commerce Agriculture and Fisheries Branch Dept. of Veterans Affairs (veterans settled as commercial fishermen) Unemployment Insurance Commission (unemployment insurance for fishermen) National Film Board	FISHERIES	Nfld.:—Dept. of Fisheries and Co-operatives P.E.I.:—Dept. of Fisheries N.S.:—Dept. of Trade and Industry, Fisheries Division N.B.:—Dept. of Industry and Development, Fisheries Branch Que.:—Dept. of Game and Fisheries Dept. of Trade and Commerce, Bureau of Statistics Ont.:—Dept. of Lands and Forests, Fish and Wildlife Division Man.:—Dept. of Mines and Natural Resources, Game and Fisheries Branch Sask.:—Dept. of Natural Resources, Fisheries Branch Alta.:—Dept. of Lands and Forests, Fish and Game Branch B.C.:—Dept. of Recreation and Conservation
	FOOD AND DRUGS See "Standards" and "Nutrition"	
	FOREIGN AFFAIRS See "External Affairs"	
Dept. of Finance Bank of Canada	FOREIGN EXCHANGE	
Dept. of Northern Affairs and National Resources Forestry Branch (federal interests) Dept. of Agriculture Forest Biology Division Dept. of Trade and Commerce Commodities Branch National Film Board Dominion Bureau of Statistics	FOREST RESOURCES	Nfld.:—Dept. of Mines and Resources P.E.I.:—Dept. of Industry and Natural Resources N.S., Que., Ont., Alta., B.C.:—Depts. of Lands and Forests N.B.:—Dept. of Lands and Mines Man.:—Dept. of Mines and Natural Resources, Forestry Branch Sask.:—Dept. of Natural Resources, Forestry Branch
	FRUIT See "Horticulture"	
	FUEL See "Coal", "Oil and Natural Gas", "Forest Resources"	

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Agriculture Research Branch (fur production) Production and Marketing Branch (fur grading) Dept. of Trade and Commerce Agriculture and Fisheries Branch Dominion Bureau of Statistics	<div>FUR FARMING</div> <div>See also</div> <div>"Trapping"</div>	Nfld.:—Dept. of Mines and Resources Dept. of Economic Development P.E.I., N.B., Alta., B.C.:—Depts. of Agriculture N.S., Ont.:—Depts. of Lands and Forests Que.:—Dept. of Agriculture Dept. of Trade and Commerce, Bureau of Statistics Man.:—Dept. of Mines and Natural Resources, Game and Fisheries Branch Sask.:—Dept. of Natural Resources Saskatchewan Fur Marketing Service
Dept. of Mines and Technical Surveys Geographical Branch Canadian Board on Geographical Names Dept. of Agriculture Soils Research Institute Dept. of Fisheries Fisheries Research Board of Canada (oceanography) Public Archives National Film Board	<div>GEOGRAPHY</div>	Nfld.:—Dept. of Mines and Resources P.E.I.:—Travel Bureau N.S.:—Dept. of Mines N.B.:—Dept. of Lands and Mines Que.:—Dept. of Lands and Forests Dept. of Trade and Commerce Dept. of Mines Ont.:—Dept. of Lands and Forests, Surveys Division Dept. of Mines Ontario Agricultural College, Department of Soils Dept. of Economics, Economic Statistics Branch Dept. of Municipal Affairs, Community Planning Branch Man.:—Dept. of Mines and Natural Resources Sask.:—Dept. of Natural Resources Dept. of Industry and Information Alta., B.C.:—Dept. of Lands and Forests
Dept. of Mines and Technical Surveys Geological Survey of Canada	<div>GEOLOGY</div>	Nfld.:—Dept. of Mines and Resources P.E.I.:—Dept. of Industry and Natural Resources N.S., B.C.:—Depts. of Mines N.B.:—Dept. of Lands and Mines Que.:—Dept. of Mines, Geological Surveys Branch Ont.:—Dept. of Mines, Geological Branch Man.:—Dept. of Mines and Natural Resources, Mines Branch Sask.:—Dept. of Mineral Resources Alta.:—Dept. of Mines and Minerals
Dept. of the Secretary of State (federal-provincial channel of communication) Chief Electoral Office (Electoral Act and voters lists) Dept. of Citizenship and Immigration Citizenship Branch (Publications) Information Division Dept. of Northern Affairs and National Resources (Yukon and N.W.T.) Dept. of Public Printing and Stationery (distribution and sale of statutory orders and regulations) Privy Council Office (appointments, orders in council, statutory orders and regulations) Public Archives (early official records)	<div>GOVERNMENT</div> <div>For Senate of Canada, House of Commons and Library of Parliament see</div> <div>"Parliament"</div>	Nfld.:—Dept. of Provincial Affairs P.E.I., N.S., Ont., Man., Sask., Alta., B.C.:—Depts. of Provincial Secretary N.B.:—Dept. of Provincial Secretary-Treasurer Que.:—Office of Provincial Secretary

Sources for Federal Data

Subject

Sources for Provincial Data

Dept. of National Health and Welfare
Dept. of Northern Affairs and National Resources (N.W.T.)
National Film Board
Dominion Bureau of Statistics

HEALTH
For Health of
Veterans
see "Veterans
Affairs"

Nfld., P.E.I., Que., Ont.:—Depts. of Health
N.S., Sask., Alta.:—Depts. of Public Health
N.B.:—Dept. of Health and Social Services
Man.:—Dept. of Health and Public Welfare
B.C.:—Dept. of Health Services and Hospital Insurance

HIGHWAYS
See
"Transportation"

Public Archives
Dept. of National Defence
Director of Public Relations
Naval Historian
Directorate of History (Army)
Air Historian
Dept. of Northern Affairs and National Resources
National Parks Branch (historic sites and monuments)
National Museum of Canada
Canadian War Museum
National Film Board
Dominion Bureau of Statistics

HISTORY

Nfld.:—Legislative Library
Memorial University
Gosling Memorial Library
P.E.I.:—Travel Bureau, Legislative Librarian
N.S.:—Public Archives
N.B.:—Legislative Library
Que.:—Office of Provincial Secretary, Provincial Archives
Provincial Library
Ont.:—Legislative Library
Archives of Ontario
Dept. of Travel and Publicity, Historical Branch
Man.:—Provincial Library and Archives
Sask.:—Legislative Library, Archives Division
Alta.:—Archives, Provincial Library
Dept. of Provincial Secretary, Publicity Bureau
B.C.:—Dept. of Education, Provincial Librarian and Archivist

HORTICULTURE

Dept. of Agriculture
Production and Marketing Branch (grading and inspection)
Research Branch
Genetics and Plant Breeding Research Institute
Plant Research Institute

Nfld.:—Dept. of Mines and Resources
P.E.I., Ont.:—Depts. of Agriculture
N.S., N.B., Alta., B.C.:—Depts. of Agriculture, Horticultural Branches
Que.:—Dept. of Agriculture, Fruit Branch
Man.:—Dept. of Agriculture and Conservation
Sask.:—Dept. of Agriculture, Plant Industry Branch

HOSPITAL
INSURANCE

Dept. of National Health and Welfare
Dept. of Northern Affairs and National Resources
Northern Administration Branch (Yukon and N.W.T.)
Dominion Bureau of Statistics

Nfld., P.E.I., Que.:—Depts. of Health
N.S.:—Hospital Services Planning Commission
N.B.:—Hospital Services Commission
Ont.:—Ontario Hospital Services Commission
Man.:—Hospital Services Plan
Sask., Alta.:—Depts. of Public Health
B.C.:—Dept. of Health Services and Hospital Insurance

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of National Health and Welfare Dept. of National Defence Office of the Surgeon General (Armed Forces hospitals) Dept. of Veterans Affairs (veterans hospitals) Dominion Bureau of Statistics	HOSPITALS	Nfld., P.E.I., Que.:—Depts. of Health N.S.:—Hospital Services Commis- sion N.B.:—Dept. of Health and Social Services Ont.:—Ontario Hospital Services Commission Man.:—Dept. of Health and Public Welfare Sask., Alta.:—Depts. of Public Health B.C.:—Dept. of Health Services and Hospital Insurance
	HOUSE OF COMMONS See "Parliament"	
Central Mortgage and Housing Corporation (long-term mort- gage loans for new houses; National Housing Act financing; apartment building standards; house designs; mortgage lending activities; insurance of loans) Dept. of Veterans Affairs (home construction assistance for vet- erans)	HOUSING	Nfld.:—Dept. of Municipal Affairs P.E.I.:—Dept. of Industry and Natural Resources Ont.:—Dept. of Planning and De- velopment, Housing Branch Sask.:—Dept. of Social Welfare, Housing Branch B.C.:—Dept. of Finance, Housing Commissioner
Dept. of Citizenship and Immigration Information Division Dept. of Labour Special Services Branch Dept. of National Health and Welfare Quarantine, Immigration Medical and Sick Mariners Division National Film Board Dominion Bureau of Statistics	IMMIGRATION	(P.E.I.:—Dept. of Industry and Natural Resources Ont.:—Dept. of Planning and De- velopment Dept. of Economics, Economic Statistics Branch Man.:—Dept. of Agriculture and Conservation Sask.:—Dept. of Social Welfare Alta.:—Dept. of Industry and De- velopment B.C.:—British Columbia House, London, England)
	INCOME TAX See "Taxation"	
Dept. of Citizenship and Immigration Information Division Dept. of Northern Affairs and National Resources Northern Administration Branch National Museum of Canada (historical and archaeological information) Dept. of National Health and Welfare (health and hospital services)	INDIANS	Nfld.:—Dept. of Public Welfare (Indians in Labrador) Que.:—Dept. of Fish and Game (fur preserves) Ont.:—Dept. of Public Welfare B.C.:—Dept. of Labour, Provincial Advisory Committee on Indian Affairs
National Industrial Design Council National Gallery of Canada (films, reference library, photographic library, exhibitions)	INDUSTRIAL DESIGN	
	INDUSTRIAL DEVELOPMENT See "Manufacturing"	

Sources for Federal Data	Subject	Sources for Provincial Data
<p>Dept. of Insurance (Dominion, British and foreign companies, Federal Civil Service insurance)</p> <p>Central Mortgage and Housing Corporation (insures loans made under National Housing Act 1954)</p> <p>Dept. of Labour Annuities Branch</p> <p>Dept. of Trade and Commerce Export Credits Insurance Corporation</p> <p>Dept. of Veterans Affairs Veterans Welfare Services (Veterans Insurance Division)</p> <p>Dominion Bureau of Statistics (summary statistics of all types of insurance)</p>	<p>INSURANCE— LIFE, FIRE, ETC. For Unemployment Insurance see "Labour"</p>	<p>Nfld.:—Dept. of Provincial Affairs P.E.I., N.S., N.B., Man., Alta., B.C.:—Superintendents of Insurance</p> <p>Que.:—Finance Dept., Insurance Branch</p> <p>Ont.:—Dept. of Insurance</p> <p>Sask.:—Superintendent of Insurance, Government Insurance Office</p>
<p>Dept. of Mines and Technical Surveys Mines Branch Mineral Resources Division</p> <p>Dept. of Trade and Commerce Commodities Branch</p> <p>Dominion Bureau of Statistics</p>	<p>IRON AND STEEL</p>	<p>Nfld.:—Dept. of Mines and Resources N.S.:—Dept. of Mines Research Foundation N.B.:—Dept. of Lands and Mines Que.:—Dept. of Trade and Commerce, Bureau of Statistics Dept. of Mines</p> <p>Ont.:—Dept. of Planning and Development, Trade and Industry Branch</p> <p>Dept. of Economics, Economic Statistics Branch</p> <p>Man.:—Dept. of Industry and Commerce</p> <p>Sask.:—Dept. of Mineral Resources</p> <p>Alta.:—Dept. of Mines and Minerals Dept. of Economic Affairs</p> <p>B.C.:—Dept. of Mines and Petroleum Resources Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics</p>
<p>Dept. of Justice</p> <p>Dominion Bureau of Statistics</p>	<p>JUSTICE</p>	<p>All Provinces:—Depts. of Attorney General</p>
<p>Dept. of Labour Information Branch Labour Gazette Branch Government Annuities Branch Legislation Branch Economics and Research Branch Canada Labour Relations Board Canadian Vocational Training Branch Civilian Rehabilitation Branch Industrial Relations Branch (conciliation of labour disputes, payment of fair wages on government contracts, promotion of labour-management co-operation, fair employment practices)</p> <p>International Labour Organization Branch</p> <p>Special Services Branch Women's Bureau</p> <p>Dept. of National Health and Welfare (occupational health)</p> <p>Dept. of Secretary of State Companies Division</p> <p>National Employment Service</p> <p>Unemployment Insurance Commission</p> <p>Dominion Bureau of Statistics</p>	<p>LABOUR See also "Workmen's Compensation"</p>	<p>Nfld., P.E.I., N.S., N.B., Man., Sask., Alta.:—Depts. of Labour</p> <p>Que.:—Dept. of Labour Provincial Bureaus of Statistics</p> <p>Ont.:—Dept. of Labour Dept. of Economics, Economic Statistics Branch</p> <p>B.C.:—Dept. of Labour Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics</p>

Sources for Federal Data	Subject	Sources for Provincial Data
<p>Dept. of Mines and Technical Surveys Surveyor General of Canada Dept. of Citizenship and Immigration Information Division (land settle- ment) Dept. of Northern Affairs and Na- tional Resources Northern Administration Branch (Yukon and N.W.T.) Dept. of Transport Real Estate Branch Dept. of Veterans Affairs Soldier Settlement and Veterans' Land Act Branch</p>	<p>LANDS AND LAND SETTLEMENT</p>	<p>Nfld.:—Dept. of Mines and Re- sources P.E.I.:—Commissioner of Public Lands N.S.:—Dept. of Agriculture, Land Settlement Board N.B.:—Dept. of Lands and Mines Que.:—Dept. of Lands and Forests Dept. of Colonization Ont., Alta.:—Depts. of Lands and Forests Man.:—Dept. of Mines and Natural Resources, Lands Branch Sask.:—Dept. of Agriculture, Lands Branch Attorney General, Land Titles B.C.:—Dept. of Agriculture, Land Clearing Dept. of Lands and Forests</p>
<p>Royal Canadian Mounted Police <i>Enforces Federal Statutes in all parts of Canada; also carries out, on behalf of Attorneys General and under contract, enforcement of the Criminal Code and Provincial Statutes in all provinces except Quebec and Ontario; is the only law-enforcement body in the Yukon and Northwest Territories and assists in the welfare of Eskimos and Indians in these territories.</i></p>	<p>LAW ENFORCEMENT</p>	<p>All Provinces:—Depts. of Attorney General</p>
<p>Clerk of the Senate of Canada Clerk of the House of Commons Dept. of Justice Dept. of Northern Affairs and National Resources (Yukon and N.W.T.) Dept. of Public Printing and Sta- tionery (distribution and sale of the Statutes of Canada and separate texts of federal legisla- tion) Privy Council Office For Acts administered by individual Federal Depts., see pp. 141-145 of this volume.</p>	<p>LEGISLATION For Statutory Orders and Regulations see "Government"</p>	<p>All Provinces except Man. and B.C.:—Depts. of Attorney Gen- eral Additional:—Ont.:—The Queen's Printer (distribution and sale of the Statutes of Ontario and various Acts) Man.:—Legislative Council B.C.:—Dept. of Provincial Secretary</p>
	<p>LIBRARIES See "Bibliography: Books"</p>	
<p>Chief Electoral Office (for local referendum under Canada Tem- perance Act) Dept. of Northern Affairs and National Resources Northern Administration Branch (Yukon and N.W.T.) Dept. of Secretary of State Special Division Dominion Bureau of Statistics</p>	<p>LIQUOR CONTROL</p>	<p>Nfld.:—Dept. of Finance P.E.I.:—Temperance Commission N.S., Que.:—Liquor Commissions N.B., Ont., Alta., B.C.:—Liquor Control Boards Man.:—Liquor Control Commission Sask.:—Liquor Board, Liquor Licens- ing Commission</p>

Sources for Federal Data

Subject

Sources for Provincial Data

Dept. of Agriculture
Livestock Division (for production and marketing data)
Poultry Division (for production and marketing data)
Health of Animals Division (for administration of disease control regulations, meat inspection, and research in animal diseases)
Animal Research Institute
Dept. of Trade and Commerce
Agriculture and Fisheries Branch
National Film Board
Dominion Bureau of Statistics

LIVESTOCK

Nfld.:—Dept. of Mines and Resources
P.E.I., N.B., Ont.:—Depts. of Agriculture, Livestock Branches
N.S.:—Dept. of Agriculture, Animal Husbandry Branch
Que.:—Dept. of Agriculture, Animal Husbandry Branch
Dept. of Trade and Commerce, Bureau of Statistics
Man.:—Dept. of Agriculture and Conservation, Livestock Branch
Sask.:—Dept. of Agriculture, Animal Industry Branch
Alta., B.C.:—Provincial Bureaus of Statistics
Depts. of Agriculture, Livestock Branches

Dept. of Northern Affairs and National Resources
Forestry Branch (federal interests)
Dept. of Trade and Commerce
Commodities Branch
National Film Board (films, filmstrips, photographs, in relation to departmental conservation and development programs)
Dominion Bureau of Statistics

LUMBERING

Nfld.:—Dept. of Mines and Resources
P.E.I.:—Dept. of Industry and Natural Resources
N.S., Que., Ont., Alta.:—Depts. of Lands and Forests
N.B.:—Dept. of Lands and Mines
Man.:—Dept. of Mines and Natural Resources, Forestry Branch
Sask.:—Dept. of Natural Resources, Forestry Branch
Dept. of Industry and Information
Saskatchewan Timber Board
B.C.:—Dept. of Lands and Forests
Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Dominion Bureau of Statistics
Bank of Canada
Industrial Development Bank
Dept. of Defence Production (for defence items)
Dept. of Secretary of State
Companies Division
Dept. of Trade and Commerce
Commodities Branch
Industrial Development Branch
National Research Council
Canadian Patents and Development Limited (utilization of new scientific processes)
National Film Board

MANUFACTURING
See also "Crown Corporations"

Nfld.:—Dept. of Economic Development
P.E.I.:—Dept. of Industry and Natural Resources
N.S.:—Dept. of Trade and Industry
N.B.:—Dept. of Industry and Development
Que.:—Dept. of Trade and Commerce, Bureau of Statistics
Ont.:—Dept. of Planning and Development, Trade and Industry Branch
Dept. of Economics, Economic Statistics Branch
Man.:—Dept. of Industry and Commerce
Sask.:—Economic Advisory and Planning Board
Dept. of Industry and Information
Government Finance Office
Alta.:—Dept. of Industry and Development
Bureau of Statistics
B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Mines and Technical Surveys Surveys and Mapping Branch Geological Survey of Canada Geographical Branch Dominion Observatories Dept. of Agriculture (soil survey and economic survey maps) Dept. of Fisheries Information and Educational Service (fisheries maps) Dept. of Transport (meteorological maps) National Research Council Division of Building Research Climatological Atlas of Canada Public Archives (maps relating to history and cartography) Dominion Bureau of Statistics (economic and census maps)	MAPS AND CHARTS	Nfld.:—Dept. of Mines and Resources P.E.I.:—Dept. of Public Works and Highways N.S.:—Dept. of Mines Research Foundation N.B.:—Dept. of Lands and Mines Que.:—Dept. of Lands and Forests Dept. of Mines Dept. of Trade and Commerce, Cartography Service Dept. of Agriculture Ont.:—Dept. of Mines Dept. of Lands and Forests Dept. of Highways Dept. of Travel and Publicity Man.:—Dept. of Mines and Natural Resources, Surveys Branch Sask.:—Dept. of Natural Resources Dept. of Industry and Information Alta., B.C.:—Depts. of Lands and Forests
	MARRIAGES See "Vital Statistics"	
Dept. of Agriculture Economics Division (co-operatives) Dominion Bureau of Statistics	MERCHANDISING	Man.:—Dept. of Industry and Commerce Sask.:—Dept. of Industry and Information Alta.:—Dept. of Industry and Development B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Dept. of Mines and Technical Surveys Mines Branch Mineral Resources Division Geological Survey of Canada Dept. of Trade and Commerce Commodities Branch Dominion Bureau of Statistics (for production data)	METALS (other than Iron and Steel)	Nfld.:—Dept. of Mines and Resources N.S., Que., Ont.:—Depts. of Mines N.B.:—Dept. of Lands and Mines Man.:—Dept. of Mines and Natural Resources, Mines Branch Sask.:—Dept. of Mineral Resources Alta.:—Dept. of Mines and Minerals B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics Dept. of Mines and Petroleum Resources
	METEOROLOGY See "Weather"	
Dept. of Mines and Technical Surveys Geological Survey of Canada Mines Branch Mineral Resources Division Dept. of Northern Affairs and National Resources (Yukon and N.W.T.) Dominion Bureau of Statistics (for production data)	MINING AND MINERALS	Nfld.:—Dept. of Mines and Resources N.S., Que., Ont.:—Depts. of Mines N.B.:—Dept. of Lands and Mines Man.:—Dept. of Mines and Natural Resources, Mines Branch Sask.:—Dept. of Mineral Resources Alta.:—Dept. of Mines and Minerals B.C.:—Dept. of Mines and Petroleum Resources

Sources for Federal Data	Subject	Sources for Provincial Data
<p>National Film Board <i>(Produces documentary films, news-reels and short subjects for theatrical, non-theatrical and television distribution; film-strips and photographs for informational, educational and archival purposes; other visual materials devoted to the interpretation of the Canadian scene to audiences both at home and abroad; and maintains a large film preview library for the benefit of government departments and other official bodies.)</i> National Gallery of Canada (library of films on art)</p>	MOTION PICTURES	<p>Nfld., P.E.I., N.B.:—Buy such films but do not produce them N.S., Que., Alta., B.C.:—Produce educational or informational films Ont.:—Films are available to the public from several departments Man.:—Dept. of Industry and Commerce Sask.:—Dept. of Industry and Information Dept. of Education, Visual Education Branch Alta.:—Dept. of Provincial Secretary, Photographic Branch B.C.:—Dept. of Recreation and Conservation <i>All provinces have Motion Picture Censorship Boards. Details may be obtained by application to the province concerned: Depts. of Education and Travel, Provincial Censorship Boards and National Film Board Regional Offices.</i></p>
<p>Dominion Bureau of Statistics Public Finance and Transportation Division</p>	MUNICIPAL AFFAIRS	<p>Nfld.:—Dept. of Municipal Affairs and Supply P.E.I., N.S., N.B., Que., Ont., Sask., Alta., B.C.:—Depts. of Municipal Affairs Man.:—Dept. of Municipal Commissioner</p>
<p>National Gallery of Canada (paintings, sculpture, etc.) Dept. of Northern Affairs and National Resources National Museum of Canada Canadian War Museum National Historic Parks Museums Laurier House, Ottawa (historical) Public Archives</p>	MUSEUMS	<p>Nfld.:—Dept. of Provincial Affairs N.S.:—Nova Scotia Museum of Fine Arts, Public Archives of Nova Scotia, Provincial Museum of Nova Scotia, Halifax N.B.:—New Brunswick Museum, Saint John Que.:—The Archives, Musée de la Province de Québec, Quebec Commercial and Industrial Museum of Montreal Ont.:—Royal Ontario Museum, Art and Archaeology, Life Sciences and Earth Sciences Divisions Archives of Ontario Man.:—Manitoba Museum, Winnipeg Sask.:—Dept. of Natural Resources, Provincial Museum, Regina Western Development Museum, Saskatoon Alta.:—Provincial Archives, Legislative Building, Edmonton B.C.:—Provincial Museum of Natural History and Anthropology, Provincial Archives (including Helmcken House), Victoria Also provincial universities of Sask., Alta., and B.C.</p>
<p>Dominion Bureau of Statistics</p>	NATIONAL ACCOUNTS	
<p>Dept. of Citizenship and Immigration Information Division</p>	NATURALIZATION See also "Population"	

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Transport Marine Services (aids to marine navigation; secondary canals) Telecommunications Branch (radio aids to navigation) Canadian Maritime Commission Dept. of Mines and Technical Surveys Hydrographic Service Legal Surveys and Aeronautical Charts Division Dept. of Public Works (acquisition, construction and improvement of harbour and river works, incl. construction and operation of graving docks and marine engineering generally) Harbours and Rivers Engineering Branch Information Services National Harbours Board National Research Council Radio and Electrical Engineering Division (applications of radar to navigation) Division of Mechanical Engineering (model-testing basin and hydraulic models) St. Lawrence Seaway Authority (St. Lawrence-Great Lakes canals)	NAVIGATION	
Dept. of National Health and Welfare Nutrition Division Dept. of Agriculture Consumer Section Dept. of Fisheries Inspection and Consumer Service	NUTRITION	Nfld., P.E.I., Que.:—Depts. of Health N.S.:—Dept. of Public Health N.B.:—Dept. of Health and Social Services Ont.:—Dept. of Health Dept. of Agriculture, Home Economics Service Man.:—Dept. of Health and Public Welfare Sask.:—Dept. of Public Health, Nutrition Division Alta.:—Dept. of Agriculture, Nutritionist B.C.:—Dept. of Health and Welfare
Dept. of Mines and Technical Surveys Director of Oceanographic Research Dept. of Fisheries Fisheries Research Board	OCEANOGRAPHY	
Dept. of Mines and Technical Surveys Geological Survey of Canada Mineral Resources Division Mines Branch Dept. of Defence Production Dept. of Northern Affairs and National Resources (Yukon and N.W.T.) Dept. of Trade and Commerce Energy Studies Branch Standards Branch Northern Ontario Pipe Line Crown Corporation Dominion Bureau of Statistics	OIL AND NATURAL GAS	Nfld.:—Dept. of Mines and Resources P.E.I.:—Dept. of Industry and Natural Resources N.S.:—Dept. of Mines N.B.:—Dept. of Lands and Mines Ont.:—Dept. of Energy Resources Dept. of Mines Man.:—Dept. of Mines and Natural Resources, Mines Branch Sask.:—Dept. of Mineral Resources Saskatchewan Power Corporation Alta.:—Dept. of Mines and Minerals Bureau of Statistics B.C.:—Dept. of Mines and Petroleum Resources

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of National Health and Welfare Dept. of Northern Affairs and National Resources (Yukon and N.W.T.)	OLD AGE ASSISTANCE	Nfld., N.S., B.C.:—Old Age Assistance Boards P.E.I.:—Director of Old Age Assistance, Dept. of Welfare N.B.:—The Old Age and Blind Assistance Board Que.:—Quebec Social Allowances Commission Ont.:—Dept. of Public Welfare, Welfare Allowances Branch Man.:—The Old Age Assistance and Blind Persons' Allowances Board Sask.:—Director of Public Assistance Alta.:—Dept. of Public Welfare
Dept. of National Health and Welfare	OLD AGE SECURITY PENSIONS	
Dept. of Northern Affairs and National Resources National Parks Branch National Capital Commission National Film Board	PARKS	Nfld.:—Dept. of Mines and Resources P.E.I.:—Dept. of Industry and Natural Resources N.S., Ont., Alta.:—Depts. of Lands and Forests N.B.:—Dept. of Lands and Mines Que.:—Dept. of Game and Fisheries Man.:—Dept. of Mines and Natural Resources, Forestry Branch Sask.:—Dept. of Natural Resources B.C.:—Dept. of Recreation and Conservation
The Senate The House of Commons Library of Parliament Privy Council Office	PARLIAMENT	Nfld.:—Dept. of Provincial Affairs P.E.I., N.B., Man., Sask., Alta., B.C.:—Legislative Assemblies N.S., Ont.:—Houses of Assembly Que.:—Legislative Council Legislative Assembly
Dept. of Secretary of State Patent and Copyright Office Canadian Patents and Development Limited (licences available on patents from Government laboratories, etc.) National Library (handles all copyright books) Trade Marks Office	PATENTS, COPY-RIGHTS AND TRADE MARKS	
National Film Board Dept. of Mines and Technical Surveys Editorial and Information Division The National Air Photographic Library Dept. of Northern Affairs and National Resources Editorial and Information Division Public Archives (historical)	PHOTOGRAPHIC MATERIAL See also "Motion Pictures" and "Tourist Trade"	Photographs are available from many provincial government departments in all provinces.

Sources for Federal Data	Subject	Sources for Provincial Data
Dominion Bureau of Statistics (for all census population statistics) Dept. of Citizenship and Immigration Information Division (Indians and immigrants) Dept. of Northern Affairs and National Resources Northern Administration Branch (for Eskimos) Public Archives (early census and settlement records)	POPULATION	Nfld.:—Dept. of Health P.E.I.:—Travel Bureau N.S.:—Dept. of Public Health, Vital Statistics Branch N.B.:—Dept. of Health and Social Services, Vital Statistics Branch Que.:—Dept. of Health, Vital Statistics Branch Dept. of Trade and Commerce, Bureau of Statistics Ont.:—Dept. of Economics, Economic Statistics Branch Man.:—Dept. of Industry and Commerce Dept. of Municipal Affairs Sask.:—Dept. of Public Health, Vital Statistics Branch Legislative Library Alta.:—Dept. of Industry and Development, Provincial Statistician B.C.:—Dept. of Health Services and Hospital Insurance, Director of Vital Statistics Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Post Office Department Public Relations (general postal information) Administration Branch (postage rates, both domestic and foreign, etc.) Comptroller's Branch (budgets, purchasing, office services) Engineering and Development Branch (buildings, mechanical engineering) Financial Branch (information regarding money orders, savings bank, philatelic services, etc.) Operations Branch (information regarding postal service to the public and hours of service) Personnel Branch (personnel, training, employee services) Transportation Branch (air, land and railway mail services)	POST OFFICE	
Dept. of Agriculture Information Division (for general information) Research Branch Poultry Division (for marketing data, breeding programs, hatchery regulations, etc.) Health of Animals Division (for poultry diseases) Dept. of Trade and Commerce Agriculture and Fisheries Branch Dominion Bureau of Statistics	POULTRY	Nfld.:—Dept. of Mines and Resources P.E.I., N.S.:—Depts. of Agriculture N.B., Alta., B.C.:—Depts. of Agriculture, Poultry Branches Que.:—Dept. of Agriculture Poultry Division Dept. of Trade and Commerce, Bureau of Statistics Ont.:—Ontario Agricultural College (Guelph), Poultry Division Man.:—Dept. of Agriculture and Conservation Sask.:—Dept. of Agriculture, Animal Industry Branch
	POWER See "Electric Power"	
Dept. of Secretary of State Special Division	PRECEDENCE AND CEREMONIAL	Nfld.:—Dept. of Provincial Affairs B.C.:—Dept. of Provincial Secretary

Sources for Federal Data	Subject	Sources for Provincial Data
Dominion Bureau of Statistics Dept. of Agriculture Production and Marketing Branch (prices of farm products) Agricultural Stabilization Board Dept. of Fisheries Fisheries Prices Support Board	PRICES	Ont.:—Dept. of Economics, Economic Statistics Branch Man.:—Dept. of Industry and Commerce Sask.:—Economic Advisory and Planning Board B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics
Dept. of Secretary of State Registration Division Public Archives (early records)	PUBLIC DOCUMENTS (Commissions of Appointment, Proclamations, Land Grants, etc.)	Nfld.:—Dept. of Provincial Affairs Ont., B.C.:—Depts. of Provincial Secretary Sask.:—Provincial Secretary
	PUBLIC HEALTH See "Health"	
Dominion Bureau of Statistics	PUBLIC UTILITIES See also "Electric Power"	Nfld.:—Public Utilities Board P.E.I., B.C.:—Public Utilities Commissions N.S., N.B.:—Boards of Commissioners of Public Utilities Que.:—Public Service Board Quebec Hydro-Electric Commission Ont.:—Ontario Municipal Board Dept. of Energy Resources The Hydro-Electric Power Commission of Ontario Ontario Telephone Authority Ontario Water Resources Commission Man.:—Dept. of Public Utilities Sask.:—Government Finance Office Saskatchewan Government Telephones Saskatchewan Power Corporation Alta.:—Board of Public Utilities Commissioners Natural Gas Utilities Board
	PUBLIC WELFARE See "Welfare"	
Dept. of Public Works Information Services Dept. of Labour Industrial Relations Branch (fair wages) Dept. of Transport Marine and Air Services St. Lawrence Seaway Authority	PUBLIC WORKS	All Provinces:—Depts. of Public Works Additional:—Ont.:—The Hydro-Electric Power Commission of Ontario Ontario Water Resources Commission

Sources for Federal Data	Subject	Sources for Provincial Data
Canadian Broadcasting Corporation (national broadcasting in Canada, including radio and television, international short-wave service) Board of Broadcast Governors (regulations for operation of stations and networks of station programming) Dept. of Transport Telecommunications Branch (all matters affecting licences and facilities) Canadian Overseas Telecommunication Corporation National Research Council Radio and Electrical Engineering Division (radio science and its application to industry)	RADIO	Ont.:—Ontario Provincial Police, Radio Communications Branch Ryerson Institute of Technology, Toronto, Radio Station CJRT—FM Sask.:—Dept. of Natural Resources, Communications Division Alta.:—Radio CKUA, Edmonton, operated by Dept. of Telephones
	RAILWAYS	
	See "Transportation"	
Dept. of Northern Affairs and National Resources National Parks Branch Canadian Government Travel Bureau Northern Administration Branch (for Y.T. and N.W.T.) Dept. of National Health and Welfare National Film Board	RECREATION	P.E.I., N.S., N.B., Que., Ont., Sask.:—Depts. of Education Man.:—Dept. of Health and Public Welfare Dept. of Industry and Commerce, Travel and Publicity Branch Alta.:—Dept. of Provincial Secretary, Community Recreation Bureau B.C.:—Dept. of Recreation and Conservation
	See also "Health"	
Dept. of Veterans Affairs Dept. of Citizenship and Immigration Information Division (Indians) Dept. of Labour Civilian Rehabilitation Branch Dept. of National Health and Welfare Dept. of Northern Affairs and National Resources Northern Administration Branch (for Eskimos) National Film Board	REHABILITATION	Nfld.:—Dept. of Public Health P.E.I.:—Dept. of Education, Co-ordinator of Rehabilitation Branch N.S.:—Dept. of Public Health, Provincial Rehabilitation Co-ordinator N.B.:—Dept. of Health and Social Services, Provincial Co-ordinator of Rehabilitation Que.:—Dept. of Social Welfare Dept. of Youth Dept. of Labour Ont.:—Workmen's Compensation Board, Dept. of Public Welfare Alcoholism Research Foundation Dept. of Reform Institutions Man.:—Dept. of Health and Public Welfare, Provincial Co-ordinator of Rehabilitation Services Sask.:—Dept. of Social Welfare, Rehabilitation Division Alta.:—Dept. of Public Welfare, Co-ordinator of Rehabilitation of Disabled Persons B.C.:—Dept. of Health Services and Hospital Insurance, Rehabilitation Co-ordinator
Canada Council (humanities and social sciences)	RESEARCH	
	See also "Economic and Social Research" and "Scientific Research"	

Sources for Federal Data

Subject

Sources for Provincial Data

Dept. of Northern Affairs and National Resources
Water Resources Branch (for Yukon and N.W.T. and federal interests in the provinces)
Northern Canada Power Commission

RESOURCE
AND
DEVELOPMENT

Nfld.:—Dept. of Economic Development
P.E.I.:—Dept. of Industry and Natural Resources
N.S.:—Depts. of Municipal Affairs, and Trade and Industry
N.B.:—Dept. of Industry and Development
Que.:—Depts. of Lands and Forests, Labour, Roads, Social Welfare, and Youth
Dept. of Trade and Commerce, Industrial Commission Branch
Ont.:—Dept. of Planning and Development
Ontario—St. Lawrence Development Commission
Dept. of Municipal Affairs, Community Planning Branch
Ontario Northland Transportation Commission, North Bay
Man.:—Dept. of Industry and Commerce
Sask.:—Dept. of Social Welfare, Rehabilitation Division
Alta.:—Dept. of Industry and Development
B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

National Research Council
Laboratory Divisions (for investigations in applied biology, building research, pure and applied chemistry, mechanical engineering, aeronautical research, pure and applied physics, radio and electrical engineering)
Regional Laboratories at Saskatoon, Sask., and Halifax, N.S.
Division of Medical Research (scholarships and grants-in-aid for graduate research in the universities)
(Inquiries for general research information should be addressed to the Technical Information Service.)
Canadian Patents and Development Limited (licences available on patents derived from government research, etc.)
Dept. of Agriculture (conducts broad programs of basic and applied research on all aspects of agriculture and forest biology)
Dept. of Mines and Technical Surveys
Geological Survey of Canada
Mines Branch
Dominion Observatories
Geographical Branch
Dept. of National Defence
Defence Research Board, Directorate of Public Relations
Dept. of National Health and Welfare
Dept. of Northern Affairs and National Resources
Forestry Branch (federal interests)
National Museum of Canada
National Parks Branch (wildlife)
Northern Research Co-ordination Centre
Dept. of Transport (aviation, radio, meteorology, navigation)
Dept. of Veterans Affairs
Treatment Services Branch (medical research)
Fisheries Research Board of Canada

SCIENTIFIC
RESEARCH

Nfld.:—Dept. of Economic Development
P.E.I.:—Dept. of Industry and Natural Resources
N.S.:—Nova Scotia Research Foundation
N.B.:—Dept. of Industry and Development, Research and Development Division
Que.:—Dept. of Trade and Commerce, Scientific Research Bureau
Ont.:—Ontario Research Foundation
Dept. of Agriculture
Dept. of Lands and Forests
Alcoholism Research Foundation
Man.:—Various Depts., such as Health and Welfare, Mines and Natural Resources, Agriculture and Conservation, Industry and Commerce
Sask.:—Saskatchewan Research Council
Alta.:—Alberta Research Council
B.C.:—Dept. of Industrial Development, Trade, and Commerce, B.C. Research Council

Sources for Federal DataSubjectSources for Provincial Data

SENATE
See "Parliament"

SMALL LOANS
AND
MONEY-LENDERS
See "Banking"

SOCIAL
SECURITY
See
"Family
Allowances"
"Blindness
Allowances"
"Old Age
Assistance"
"Old Age
Security"
"Disabled Persons
Allowances"
"Workmen's
Compensation"
"Labour"
"Unemployment"
"Veterans Affairs"
"Economic and
Social Research"

SOCIAL WELFARE
See "Welfare"

Sources for Federal Data	Subject	Sources for Provincial Data
<p>Dept. of Trade and Commerce Standards Branch (for inquiries on electricity and gas inspection, weights and measures, precious metals marking, commodity standards and national trade mark matters)</p> <p>Canadian Government Specifications Board (specifications for purchasing)</p> <p>Canadian Standards Association</p> <p>Central Mortgage and Housing Corporation apartment building standards (NHA financed)</p> <p>Dept. of Agriculture (for inquiries on standards for meat, canned food, fruit, honey, maple products, vegetables, dairy products, poultry, etc.)</p> <p>Dept. of Fisheries (standards of fish products)</p> <p>Dept. of National Health and Welfare (for standards and methods of control of quality or potency of food and drugs)</p> <p>Dept. of Transport (standards in radio frequencies, standards in steamship inspection)</p> <p>National Research Council Applied Physics Division (fundamental physical and electrical standards)</p> <p>Division of Building Research, Specifications Section</p>	<p>STANDARDS AND SPECIFICATIONS</p>	
	<p>STEAMSHIPS See "Transportation"</p>	
	<p>SUCCESSION DUTIES See "Taxation"</p>	
<p>Dept. of National Revenue Taxation Division (income tax and estate, tax statistics and information. Also provincial corporation taxes)</p> <p>Customs and Excise Division (customs, excise and sales tax statistics and information)</p> <p>Dept. of Finance (Budget papers reviewing taxation policy, changes in rates, revenue forecasts)</p>	<p>TAXATION</p>	<p>Nfld., Que.:—Depts. of Finance P.E.I.:—Provincial Treasurer N.S.:—Dept. of Provincial Treasurer N.B.:—Dept. of Provincial Secretary-Treasurer Ont.:—Provincial Treasurer's Dept. Man., Sask.:—Provincial Treasury Depts. Alta.:—Provincial Treasurer's Dept. Dept. of Provincial Secretary B.C.:—Dept. of Finance, Surveyor of Taxes</p>
	<p>TELEGRAPHS AND TELEPHONES See "Communications"</p>	
<p>Board of Broadcast Governors Canadian Broadcasting Corporation Dept. of Transport Telecommunications Branch National Research Council National Film Board</p>	<p>TELEVISION See also "Radio"</p>	

Sources for Federal Data	Subject	Sources for Provincial Data
<p>Dept. of Mines and Technical Surveys Topographical Survey Division National Research Council Applied Physics Division (photogrammetric research)</p>	TOPOGRAPHY	<p>Nfld.:—Dept. of Mines and Resources N.S.:—Dept. of Mines Nova Scotia Research Foundation N.B.:—Dept. of Lands and Mines Que.:—Dept. of Lands and Forests Dept. of Trade and Commerce, Cartography Service Dept. of Mines Ont.:—Dept. of Lands and Forests, Surveys Branch Man.:—Dept. of Mines and Natural Resources Sask.:—Dept. of Natural Resources Alta., B.C.:—Depts. of Lands and Forests</p>
<p>Dept. of Northern Affairs and National Resources National Parks Branch Canadian Government Travel Bureau Dept. of Trade and Commerce Canadian Government Exhibition Commission (displays) National Film Board Dominion Bureau of Statistics</p>	TOURIST TRADE	<p>Nfld.:—Tourist Development Board P.E.I.:—Dept. of Provincial Secretary, Tourist and Information Branch N.S.:—Dept. of Trade and Industry, Travel Bureau N.B.:—New Brunswick Travel Bureau Que.:—Provincial Tourist Bureau Ont.:—Dept. of Travel and Publicity Man.:—Dept. of Industry and Commerce Sask.:—Dept. of Industry and Information, Travel Bureau Alta.:—Dept. of Provincial Secretary, Alberta Travel Bureau B.C.:—Dept. of Recreation and Conservation, Travel Branch</p>
<p>Dept. of Trade and Commerce Agriculture and Fisheries Branch Canadian Government Exhibition Commission Commodities Branch (for exports, imports, transportation, etc.) Energy Studies Branch Export Credits Insurance Corporation International Development Branch International Economic and Technical Co-operation Division (Colombo Plan) International Trade Relations Branch Small Business Branch Standards Branch (weights and measures) Trade Commissioner Service Trade Publicity Branch Dept. of Secretary of State Companies Division National Film Board (films, filmstrips, photographs, for exhibition publicity purposes) Dominion Bureau of Statistics</p>	TRADE	<p>(For incorporation of companies under provincial law, address Provincial Secretaries except B.C., where Attorney-General's Department is the authority.) Nfld.:—Dept. of Economic Development P.E.I.:—Dept. of Industry and Natural Resources N.S.:—Dept. of Trade and Industry N.B.:—Dept. of Industry and Development Que.:—Dept. of Trade and Commerce Ont.:—Dept. of Planning and Development, Trade and Industry Branch Dept. of Economics, Economic Statistics Branch Man.:—Dept. of Industry and Commerce Sask.:—Dept. of Industry and Information, Trade and Business Information Services Alta.:—Dept. of Industry and Development B.C.:—Dept. of Industrial Development, Trade, and Commerce</p>
<p>Dept. of the Secretary of State Bureau for Translations</p>	TRANSLATION	<p>Que.:—Legislative Assembly Bureau for Translations</p>

Sources for Federal Data	Subject	Sources for Provincial Data
<p>Dept. of Transport Information Services Canadian Maritime Commission National Harbours Board St. Lawrence Seaway Authority Trans-Canada Air Lines Air Transport Board (regulation of commercial air services) Board of Transport Commissioners (regulations re construction and operation of railways; construction and protection of highway crossings; rates of railways, express companies and certain inland water carriers; rates with respect to communications, international bridges and tunnels; issuing of licences to certain inland carriers) Dept. of National Defence Directorate of Public Relations (Army) (for maintenance of Alaska Highway) Dept. of National Health and Welfare Civil Aviation Medicine Division Dept. of Northern Affairs and National Resources ("Roads to Resources" and "Territorial Development Roads" programs) National Parks Branch (for highways in National Parks) Dept. of Public Works (Trans-Canada Highway, roads and bridges in the North and in National Parks and international and interprovincial bridges) Development Engineering Branch Information Services Dept. of Trade and Commerce Transportation and Trade Services Division Northern Transportation Company Limited (Crown) National Film Board Dominion Bureau of Statistics</p>	<p>TRANSPORTATION</p>	<p>Nfld., N.S.:—Depts. of Highways P.E.I.:—Dept. of Industry and Natural Resources N.B.:—Dept. of Public Works, Highways Branch Que.:—Dept. of Transportation and Communications Ont.:—Dept. of Transport Dept. of Highways, Ontario Northland Transportation Commission, North Bay Man.:—Dept. of Public Works, Highways Branch Dept. of Mines and Natural Resources Dept. of Public Utilities Dept. of Industry and Commerce Sask.:—Dept. of Highways and Transportation Saskatchewan Transportation Company Alta.:—Dept. of Railways and Telephones Dept. of Highways, Highway Traffic Board B.C.:—Dept. of Commercial Transport Public Utility Commission Dept. of Highways Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics</p>
<p>Dept. of Northern Affairs and National Resources Northern Administration Branch (Yukon and N.W.T.) National Parks Branch Dept. of Citizenship and Immigration Information Division (Indians) Dominion Bureau of Statistics (for general trapping statistics)</p>	<p>TRAPPING</p> <p>See also "Fur Farming"</p>	<p>Nfld.:—Dept. of Mines and Resources P.E.I.:—Dept. of Industry and Natural Resources N.S., Ont., Alta.:—Depts. of Lands and Forests N.B.:—Dept. of Lands and Mines Que.:—Dept. of Game and Fish Man.:—Dept. of Mines and Natural Resources Sask.:—Dept. of Natural Resources, Fur Marketing Service B.C.:—Dept. of Recreation and Conservation</p>
<p>Dept. of Labour Economics and Research Branch Unemployment Insurance Commission Dominion Bureau of Statistics</p>	<p>UNEMPLOYMENT</p>	<p>Nfld., N.S., Que., Sask., Alta.:—Depts. of Labour Ont.:—Dept. of Public Welfare Dept. of Economics, Statistics Branch B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics Dept. of Labour</p>

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of National Health and Welfare Dept. of Northern Affairs and National Resources, Northern Administration Branch (Yukon and N.W.T.)	UNEMPLOYMENT ASSISTANCE	Nfld., P.E.I., N.S., Man., Sask., B.C.:—Depts. of Public Welfare N.B.:—Dept. of Health and Social Services Que.:—Dept. of Social Welfare Ont.:—Dept. of Public Welfare, Unemployment Relief Branch
Central Mortgage and Housing Corporation	URBAN REDEVELOPMENT	Ont.:—Dept. of Planning and Development, Housing Branch
Dept. of Veterans Affairs (general information, rehabilitation, welfare—War Veterans Allowance applications, training, treatment, land settlement, gratuities, re-establishment credit, education of children of war dead, insurance, business and professional loans, records of service, war graves and medals) Canadian Pension Commission (the Pension Act and Civilian War Pensions and Allowances Act) Dept. of Citizenship and Immigration Indian Affairs Branch (for Indian veterans) Dept. of Finance (veterans business and professional loans) Dept. of Labour (reinstatement, vocational training) Unemployment Insurance Commission (unemployment insurance benefits) War Veterans Allowance Board (the War Veterans Allowance Act)	VETERANS AFFAIR	P.E.I.:—Provincial Secretary N.S.:—Dept. of Public Welfare N.B.:—Dept. of Health and Social Services Que.:—Dept. of Social Welfare Ont.:—Dept. of Public Welfare, Soldiers Aid Commission Sask.:—Dept. of Social Welfare, Rehabilitation Division Alta.:—Veterans Welfare Advisory Commission B.C.:—Dept. of Provincial Secretary
Dominion Bureau of Statistics Dept. of Citizenship and Immigration Information Division (Indians and immigrants) Dept. of Northern Affairs and National Resources Northern Administration Branch (Yukon and N.W.T.) Public Archives (early census records)	VITAL STATISTICS	Nfld., Que., B.C.:—Depts. of Health P.E.I.:—Dept. of Health, Director of Vital Statistics N.S., Alta.:—Depts. of Public Health, Registrars General N.B.:—Dept. of Health and Social Service Ont.:—Dept. of Provincial Secretary, Registrar-General's Branch Man.:—Dept. of Health and Public Welfare Sask.:—Dept. of Public Health, Vital Statistics Branch
Dept. of Labour Industrial Relations Branch (fair wages) Economics and Research Branch Legislation Branch Dominion Bureau of Statistics	WAGES (including Working Conditions)	All Provinces:—Depts. of Labour Additional:—Ont.:—Dept. of Economics, Economic Statistics Branch Alta.:—Dept. of Industry and Development B.C.:—Dept. of Industrial Development, Trade, and Commerce, Bureau of Economics and Statistics

Sources for Federal Data	Subject	Sources for Provincial Data
Dept. of Northern Affairs and National Resources Water Resources Branch (for Yukon and N.W.T. and federal interests in provinces) Dept. of Agriculture Prairie Farm Rehabilitation Administration Branch Dept. of Fisheries (where fishery resources are affected) Dept. of Mines and Technical Surveys Mines Branch (industrial waters) Geological Survey of Canada (ground-water studies) National Film Board	WATER RESOURCES	Nfld.:—Dept. of Mines and Resources N.S.:—Nova Scotia Power Commission N.B.:—Dept. of Lands and Mines Que.:—Dept. of Hydraulic Resources Ont.:—Dept. of Planning and Development Dept. of Lands and Forests Ontario Water Resources Commission Man.:—Dept. of Mines and Natural Resources, Water Resources Branch Sask., Alta.:—Depts. of Agriculture B.C.:—Dept. of Lands and Forests
Dept. of Transport Meteorological Branch, Toronto National Research Council Division of Building Research Climatological Atlas of Canada	WEATHER	
Dept. of Northern Health and Welfare Dept. of Citizenship and Immigration Information Division (Indians) Dept. of Labour Government Annuities Branch Dept. of Northern Affairs and National Resources Northern Administration Branch (for Eskimos) National Advisory Committee on the Rehabilitation of Disabled Persons Northwest Territories Council, Ottawa Unemployment Insurance Commission Yukon Territorial Council, Whitehorse National Film Board Dominion Bureau of Statistics	WELFARE For Welfare of Veterans see "Veterans Affairs"	Nfld., N.S., Ont., Alta.:—Depts. of Public Welfare P.E.I.:—Dept. of Welfare N.B.:—Dept. of Health and Social Services Que.:—Dept. of Social Welfare Dept. of Youth Man.:—Dept. of Health and Public Welfare Sask., B.C.:—Depts. of Social Welfare
Dept. of Northern Affairs and National Resources National Parks Branch Canadian Wildlife Service National Museum of Canada Commissioner of Yukon Territory, Whitehorse Dept. of Fisheries Information and Educational Service National Film Board	WILDLIFE	Nfld.:—Dept. of Mines and Resources P.E.I.:—Dept. of Industry and Natural Resources N.S., Ont., Alta.:—Depts. of Lands and Forests N.B.:—Dept. of Lands and Mines Que.:—Dept. of Game and Fish Man.:—Dept. of Mines and Natural Resources Sask.:—Dept. of Natural Resources, Wildlife Branch B.C.:—Dept. of Recreation and Conservation
Dept. of Labour Government Employees' Compensation Branch Merchant Seamen Compensation Board	WORKMEN'S COMPENSATION	Provincial Workmen's Compensation Boards at: Nfld.:—St. John's P.E.I.:—Charlottetown N.S.:—Halifax; N.B.:—Saint John Ont.:—Toronto; Man.:—Winnipeg Sask.:—Regina; Alta.:—Edmonton B.C.:—Vancouver Que.:—Workmen's Compensation Commission

PART II.—SPECIAL MATERIAL PUBLISHED IN FORMER EDITIONS OF THE CANADA YEAR BOOK

It is not possible to include in any single edition of the Year Book all articles and descriptive text of previous editions. Therefore the following list has been compiled as an index to such miscellaneous material and special articles as are not repeated in the present edition. This list links up the 1960 Year Book with its predecessors in respect of matters that have not been subject to wide change. Those Sections of Chapters, such as "Population", which are automatically revived when later census material is made available and to which adequate references are made in the text, are not listed unless they are in the nature of special contributions. The latest published article on each subject is shown, except when an earlier article includes material not repeated in the later one. When an article covers more than one subject it is listed under each appropriate heading.

The articles marked with an asterisk (*) are available in reprint form from the Information Services Division, Dominion Bureau of Statistics.

Subject and Article	Contributor	Edition	Page
Agriculture—			
Prairie Farm Rehabilitation Program.....	WILLIAM DICKSON.	1938	223-230
Historical Background of Canadian Agriculture.....	G. S. H. BARTON, C.M.G., B.S.A., D.Sc.A.	1939	187-190
The War and Canadian Agriculture.....	—	1945	188-191
Agricultural Marketing Legislation, 1939.....	—	1940	181-185
The 1946-47 National Agricultural Program and Policy.....	—	1947	324-328
The Canadian Wheat Board, 1939-46.....	C. B. DAVIDSON. T. W. GRINDLEY. W. G. MALAHER. C. V. PARKER. P. C. STORBE.	1947	778-813
The Major Soil Zones and Regions of Canada.	—	1951	352-356
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The Development of the Fine Arts in Canada	NEWTON McTAVISH, M.A., D. Litt.	1931	995-1009
A Bibliography of Canadian History.....	GUSTAVE LANCTOT, LL.M., D. Litt., LL.D., K.C., F.R.S.C.	1939	86-90
*The Democratic Functioning of the Press	SENATOR, THE HON. W. A. BUCHANAN.	1945	744-748
Royal Commission on National Development in the Arts, Letters and Sciences.....	—	1951	315-316
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*A History of Canadian Journalism, 1752- (circa) 1900.....	W. H. KESTERTON.	1957-58	920-934
*A History of Canadian Journalism (circa) 1900-1953.....	W. H. KESTERTON.	1959	883-902
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The Royal Canadian Mint.....	H. E. EWART.	1940	888-892
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*The Underwriting and Distribution of Investments; their Influence on the Capital Market.....	Investment Dealers Association of Canada.	1942	830-833
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Early Naturalization Procedure and Events Leading up to the Canadian Citizenship Act.....	—	1951	153-155
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*Meteorology Related to the Science of Aviation.....	J. PATTERSON, O.B.E., LL.D.	1933-44	24-29
*The Climate of Canada (textual material appears in the 1959 Year Book but the reprint includes both textual and tabular data).....	C. C. BOUGHNER and M. K. THOMAS	1959	23-51
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*History and Development of the Canadian Broadcasting Corporation.....	DR. AUGUSTIN FRIGON, C.M.G.	1947	737-740
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*Canada's Part in the Relief and Rehabilitation of the Occupied Territories.....	—	1945	79-85
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*The Privy Council Office and Cabinet Secretariat in Relation to the Development of Cabinet Government.....	W. E. D. HALLIDAY.	1956	62-70
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The Effects of Government Wartime Expenditures on the Construction Industry...	H. CARL GOLDENBERG.	1941	366-368
*The Changing Pattern of Canada's Housing..	—	1957-58	732-734
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A Historical Sketch of Criminal Law and Procedure.....	R. E. WATTS.	1932	897-899
*The Influence of the Royal Canadian Mounted Police in the Building of Canada.....	S. T. WOOD, C.M.G.	1950	317-331
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*Scientific Management of Game Fish in Canada's National Parks.....	—	1956	35-39
Groundfish Species in the Canadian Fisheries	T. H. TURNER.	1957-58	591-595
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*Noxious Forest Insects and Their Control (10 cts.).....	J. J. DE GRUYSE.	1947	389-400
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*Insurance in Canada during the Depression and War Periods (10 cts.).....	G. D. FINLAYSON, C.M.G.	1947	1064-1074

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*The Pulp and Paper Industry in Canada (10 cts.).....	—	1952-53	467-475
*Steel in Canada.....	E. WESTBROOK and F. M. PELLETTIER.	1959	618-625
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*The Contribution to Science made by the Dominion Astrophysical Observatory (10 cts.).....	DR. J. A. PEARCE.	1948-49	63-71
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*Geophysics in Canada.....	DR. C. S. BEALS. DR. J. T. WILSON.	} 1956	43-49
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*Astronomy in Canada.....	DR. C. S. BEALS. DR. J. F. HEARD. A. E. COVINGTON.	} 1956	49-55
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*Conversion Program to 60-cycle Power in Southern Ontario (10 cts.).....	—	1951	540-548
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*International Civil Aviation Organization and Canada's Participation Therein (10 cts.)...	BRIGADIER C. S. BOOTH.	1952-53	820-827
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PART III.—REGISTER OF OFFICIAL APPOINTMENTS

The following list of official appointments continued up to Oct. 15, 1960, the list published in the 1959 Year Book at pp. 1221-1230.

Governor General's Staff.—1959. Oct. 2, Flight Lieutenant Paul E. Hinch, Torbay, Nfld.; and Lieutenant David A. Avery, Port Robinson, Ont.: to be Aides-de-Camp to His Excellency the Governor General. Oct. 24, Esmond Unwin Butler: to be Secretary to the Governor General, effective Nov. 15, 1959. Dec. 7, Assistant Commissioner Joseph Rudolphe Lemieux, RCMP, Victoria, B.C.; Superintendent Joseph Robert Wilfrid Bordeleau, RCMP, Ottawa, Ont.; Superintendent Lloyd Bingham, RCMP, Edmonton, Alta.; and Superintendent Harry Amos Maxted, RCMP, Fredericton, N.B.: to be Honorary Aides-de-Camp to His Excellency the Governor General, effective Dec. 1, 1959. Dec. 12, Commander A. W. Ross, RCN (R), Lieutenant Colonel A. H. Fraser, D.S.O., C.D., and Group Captain R. B. Barker, D.F.C., C.D., Vancouver, B.C.; Acting Commodore H. V. W. Groos, C.D., RCN, and Lieutenant Colonel J. Fawcett, C.D., Victoria, B.C.; Commander J. F. McKenzie, C.D., RCN (R) and Group Captain W. A. Mostyn-Brown, A.F.C., C.D., Calgary, Alta.; Commander L. J. Garrett, C.D., RCN (R), Acting Colonel R. A. Bradburn, E. D., and Group Captain J. K. Campbell, C.D., Edmonton, Alta.; Commander T. S. Cook, C.D., RCN (R), and Lieutenant Colonel D. L. Brown, D.S.O., Regina, Sask.; Acting Commander C. L. McLeod, C.D., RCN (R) and Acting Group Captain E. B. Van Slyck, D.F.C., C.D., Saskatoon, Sask.; Captain L. B. McIlhagga, C.D., RCN (R), Lieutenant Colonel J. A. D. Graham, C.D., and Group Captain G. S. Varnam, Winnipeg, Man.; Commander W. R. Inman, C.D., RCN (R), Colonel R. B. McDougall, C.D., Acting Lieutenant Colonel G. G. Aldous, M.C. (*ex officio*) and Group Captain F. H. Watkins, D.F.C., C.D., Ottawa, Ont.; Commodore R. I. Hendy, V.R.D., RCN (R), Acting Lieutenant Colonel R. C. Rutherford, M.B.C., C.D. (*ex officio*) and Group Captain R.C.A. Waddell, D.S.O., A.F.C., Toronto, Ont.; Commander W. T. Houghton, C.D., RCN, and Group Captain G. C. Frostad, C.D., Hamilton, Ont.; Captain (S) G. A. MacLachlan, RCN (R), London, Ont.; Commander W. G. Curry, C.D., RCN (R), Windsor, Ont.; Commodore D. W. Piers, D.S.C., C.D., RCN, Kingston, Ont.; Acting Colonel W. H. Hemphill, C.D., Stratford, Ont.; Acting Colonel M. E. Clarke, E.D., Peterborough, Ont.; Colonel A. G. Chubb, D.S.O., C.D., Oakville, Ont.; Lieutenant Colonel A. D. Egan, C.D. (*ex officio*), Petawawa, Ont.; Commander T. C. Luck, C.D., RCN (R), Port Arthur, Ont.; Commodore H. L. Quinn, RCN, Colonel J. P. Gauthier, D.S.O., C.D., Colonel R. T. Ont.; Commodore H. L. Quinn, RCN, Colonel J. P. Gauthier, D.S.O., C.D., Colonel R. T. Bennett, O.B.E., C.D., Lieutenant Colonel G. R. Whiston, M.B.E. (*ex officio*), and Air Vice Marshal A. Raymond, C.B.E., Montreal, Que.; Commander (S) J. L. Neveu, RCN, Wing Commander J. L. LaRochelle, C.D., Lieutenant Colonel J. E. Morin, C.D., Brigadier P. Triquet, V.C., C.D., and Lieutenant Colonel J. O. A. Letellier, M.B.E., Quebec, Que.; Group Captain N.W. Timmerman, D.S.O., D.F.C., C.D., Chatham, N.B.; Acting Commander R. M. Black, RCN (R), Saint John, N.B.; Major-General H. N. Ganong, C.B.E., E.D., St. Stephen, N.B.; Commodore M. A. Medland, C.D., RCN, Major-General H. W. Foster, C.B.E., D.S.O., C.D., and Group Captain C. W. Burgess, D.F.C., C.D., Halifax, N.S.; Acting Brigadier T. G. Cooke, C.D., Sydney, N.S.; Commander John N. Kenny, RCN (R), and Acting Brigadier A. W. Rogers, E.D., Charlottetown, P.E.I.; Group Captain J. E. Creeper, D.F.C., C.D., Summerside, P.E.I.; Commander H. Garrett, O.B.E., V.R.D., RCN (R), Brigadier M. O. Morgan, C.D., and Wing Commander G. H. Bastow, D.F.C., C.D., St. John's, Nfld.: to be Honorary Aides-de-Camp, effective Sept. 15, 1959. 1960. Jan. 25, Inspector Louis-Eugène-Roméo Defayette, RCMP, Montreal, Que.; Inspector Joseph-Télesphore-Ernest-René Allard, RCMP, Quebec, Que.; and Inspector Voitto Matias Seppala, RCMP, Toronto, Ont.: to be Honorary Aides-de-Camp, effective Jan. 20, 1960. Feb. 13, Acting Lieutenant-Colonel C. D. Arthur, C.D.: to be Honorary Aide-de-Camp, effective Feb. 1, 1960. Mar. 31, Acting Lieutenant-Colonel P. F. Ramsay, E.D.: to be Honorary Aide-de-Camp, effective Mar. 18, 1960. May 14, Assistant Commissioner Douglas Oswald Forrest, RCMP, Victoria, B.C.: to be Honorary Aide-de-Camp, effective Apr. 25, 1960. June 23, Superintendent Francis Brian Woods-Johnson, RCMP,

Toronto, Ont.: to be Honorary Aide-de-Camp, effective June 24, 1960. *July 14*, Acting Commander D. H. Botley, RCN (R): to be Honorary Aide-de-Camp, effective Sept. 12, 1960. *July 23*, Acting Lieutenant-Colonel C. Falardeau, C.D.: to be Honorary Aide-de-Camp, effective July 1, 1960. *July 27*, Commander J. W. Dangerfield, C.D., RCN (R): to be Honorary Aide-de-Camp. *July 30*, Group Captain M. G. Marshall, D.F.C., C.D. (Auxiliary): to be Honorary Aide-de-Camp, effective Jan. 15, 1960. *Aug. 13*, Acting Commander D. M. Keith, RCN (R): to be Honorary Aide-de-Camp, effective July 1, 1960. *Aug. 27*, Colonel P. S. Cooper, O.B.E., C.D.: to be Honorary Aide-de-Camp, effective Aug. 15, 1960. *Sept. 24*, Group Captain J.K.F. MacDonald, D.F.C., C.D.: to be Honorary Aide-de-Camp, effective Sept. 8, 1960. Brigadier W. A. B. Anderson, O.B.E., C.D.: to be Honorary Aide-de-Camp, effective July 1, 1960.

Queen's Honorary Physicians and Surgeons.—1960. *Apr. 30*, Surgeon Rear Admiral T. B. McLean, C.D., M.D., Surgeon General, Canadian Forces: to be Queen's Honorary Surgeon for tenure of office, effective Apr. 1, 1960. Brigadier G. L. Morgan Smith, C.B.E., C.D., M.A., M.D., Deputy Surgeon General (Administration), and Brigadier E. H. Ainslie, C.D., M.D., M.Sc., D.A., F.R.C.P.(C), Deputy Surgeon General (Professional): to be Queen's Honorary Physicians for tenure of office, effective Apr. 1, 1960.

Lieutenant-Governors.—1959. *Oct. 30*, Errick F. Willis, Boissevain, Man.: to be Lieutenant-Governor of the Province of Manitoba, effective Jan. 15, 1960. *Dec. 19*, J. Percy Page, Edmonton, Alta.: to be the Lieutenant-Governor in and for the Province of Alberta. *Oct. 11*, Major-General the Hon. George Randolph Pearkes, V.C., P.C., C.B., D.S.O., M.C., C. de G.: to be Lieutenant-Governor of the Province of British Columbia, effective Oct. 12, 1960.

Cabinet Ministers.—1960. *Oct. 11*, Hon. George Hees, a Member of the Queen's Privy Council for Canada: to be Minister of Trade and Commerce. Hon. Léon Balcer, a Member of the Queen's Privy Council for Canada: to be Minister of Transport. Hon. Gordon Churchill, a Member of the Queen's Privy Council for Canada: to be Minister of Veterans Affairs. Hon. Douglas Scott Harkness, a Member of the Queen's Privy Council for Canada: to be Minister of National Defence. Hon. Francis Alvin George Hamilton, a Member of the Queen's Privy Council for Canada: to be Minister of Agriculture. Hugh John Flemming, Fredericton, N.B.: to be a Member of the Queen's Privy Council for Canada and Minister of Forestry. Noël Dorion, Ste. Foy, Que.: to be a Member of the Queen's Privy Council for Canada and Secretary of State and Registrar General of Canada. Walter Dinsdale, Brandon, Man.: to be a Member of the Queen's Privy Council for Canada and Minister of Northern Affairs and National Resources. George Ernest Halpenny, London, Ont.: to be a Member of the Queen's Privy Council for Canada, and a Member of the Administration. Hon. William J. Browne, a Member of the Queen's Privy Council for Canada: to be the Solicitor General of Canada.

Senators.—1960. *Jan. 14*, Frederick Murray Blois, Truro, N.S.: to be a member of the Senate and a Senator for the Province of Nova Scotia. Mrs. Olive Lillian Irvine, Winnipeg, Man.: to be a member of the Senate and a Senator for the Province of Manitoba. *Jan. 20*, Hon. Henri Courtemanche, Mont Laurier, Que.: to be a member of the Senate and a Senator for the Division of Rougemont in the Province of Quebec. *June 24*, John Michael MacDonald, Q.C., North Sydney, N.S.: to be a member of the Senate and a Senator for the Province of Nova Scotia. *Sept. 12*, Hon. Alfred Johnson Brooks, Sussex, N.B.: to be a member of the Senate and a Senator for the Province of New Brunswick.

Parliamentary Secretaries.—1959. *Nov. 18*, Paul Martineau, M.P.: to be Parliamentary Secretary to the Prime Minister. Richard A. Bell, M.P.: to be Parliamentary Secretary to the Minister of Finance. Walter C. Dinsdale, M.P.: to be Parliamentary Secretary to the Minister of Veterans Affairs. Clayton W. Hodgson, M.P.: to be Parliamentary Secretary to the Minister of Transport. Egan Chambers, M.P.: to be Parliamentary Secretary to the Minister of National Defence. John C. Pallett, M.P.: to be Parliamentary Secretary to the Minister of Trade and Commerce. Thomas M. Bell, M.P.: to be Parliamentary Secretary to the Minister of Justice. Marcel Lambert, M.P.: to be Parliamentary

Secretary to the Minister of National Revenue. L. E. Cardiff, M.P.: to be Parliamentary Secretary to the Minister of Agriculture. John A. Charlton, M.P.: to be Parliamentary Secretary to the Minister of Citizenship and Immigration. Roland L. English, M.P.: to be Parliamentary Secretary to the Minister of Fisheries. Richard D. Thrasher, M.P.: to be Parliamentary Secretary to the Minister of Labour. Edmund E. Morris, M.P.: to be Parliamentary Secretary to the Postmaster General. Yvon-Roma Tassé, M.P.: to be Parliamentary Secretary to the Minister of Public Works.

Deputy Ministers.—1959. *Dec. 7*, Sidney Clifford Barry, Director General, Production and Marketing Branch, Department of Agriculture: to be Deputy Minister of Agriculture, effective Jan. 1, 1960. **1960.** *Mar. 3*, James Alan Roberts: to be Deputy Minister of Trade and Commerce. *Apr. 26*, Dr. George F. Davidson, Deputy Minister of National Health and Welfare (Welfare): to be Deputy Minister of Citizenship and Immigration. *June 23*, Donald S. Maxwell, Director, Civil Litigation Section, Department of Justice: to be Associate Deputy Minister of Justice. Elmer Abram Dreidger, Q.C., Assistant Deputy Minister of Justice: to be Deputy Minister of Justice and Deputy Attorney General of Canada, effective July 1, 1960. *July 12*, Dr. Joseph William Willard, Director, Research and Statistics Division, Department of National Health and Welfare: to be Deputy Minister of National Health and Welfare (Welfare). *July 14*, R. M. Cadieux: to be Deputy Under Secretary of State for External Affairs. *Sept. 1*, Elgin B. Armstrong, Assistant Deputy Minister of National Defence: to be Deputy Minister of National Defence.

Diplomatic Appointments.—1959. *Sept. 25*, Allan C. Anderson: to be Ambassador Extraordinary and Plenipotentiary of Canada to Cuba. *Oct. 30*, Arnold Kingsley Graham: to be Ambassador Extraordinary and Plenipotentiary of Canada to Sweden. *Nov. 20*, Allan C. Anderson: to be Ambassador Extraordinary and Plenipotentiary of Canada to Haiti. *Dec. 10*, Paul Tremblay: to be Ambassador Extraordinary and Plenipotentiary of Canada to Chile. **1960.** *Jan. 28*, Thomas L. Carter: to be Commissioner to the Diplomatic Mission in Nigeria. *Jan. 29*, Lieutenant-General Eedson Louis Millard Burns, Special Adviser in the Department of External Affairs: to be Ambassador and Representative of the Government of Canada to the Disarmament Committee, effective Jan. 1, 1960, and to be also Adviser to the Government of Canada on Disarmament. *Mar. 9*, William Arthur Irwin: to be Ambassador Extraordinary and Plenipotentiary of Canada to Mexico. *Apr. 20*, J. G. Bisson, Chief Commissioner of the Unemployment Insurance Commission: to be Consul General at New Orleans, La., U.S.A. *July 25*, Robert Alexander Mackay: to be Ambassador Extraordinary and Plenipotentiary of Canada to Iceland. Sydney David Pierce: to be Ambassador Extraordinary and Plenipotentiary of Canada to Luxembourg. Gordon Hamilton Southam: to be Ambassador Extraordinary and Plenipotentiary of Canada to Poland. John Alexander McCordick: to be Envoy Extraordinary and Minister Plenipotentiary of Canada to Czechoslovakia. *Aug. 2*, James George: to be High Commissioner for Canada to Ceylon. *Aug. 29*, Benjamin Rogers: to be Deputy High Commissioner for Canada in London. *Sept. 8*, William McKenzie Wood: to be Acting Consul General at Leopoldville, Congo. *Oct. 1*, Thomas L. Carter: to be High Commissioner for Canada to Nigeria.

Judicial Appointments

Higher Courts.—1959. *Oct. 2*, James Francis Donnelly, Goderich, to be a Judge of the Supreme Court of Ontario and a member of the High Court of Justice for Ontario. *Oct. 21*, Frank M. Bastin, Barrister-at-Law, Winnipeg, Man.: to be a Judge of the Court of Queen's Bench for Manitoba. Hon. Calvert Charlton Miller, a Judge of the Court of Queen's Bench for Manitoba: to be a Judge of the Court of Appeal for Manitoba and *ex officio* a Judge of the Court of Queen's Bench for Manitoba. *Dec. 1*, Pierre A. Badeaux, Q.C., Montreal, Que.: to be a Puisne Judge of the Court of Queen's Bench in and for the Province of Quebec, effective Jan. 1, 1960. **1960.** *Mar. 10*, Hon. Samuel Freedman, a Judge of the Court of Queen's Bench for Manitoba: to be a Judge of the Court of Appeal for Manitoba and *ex officio* a Judge of the Court of Queen's Bench for Manitoba. Leopold

Larouche, a District Judge for the District of Rouyn-Noranda in the Province of Quebec: to be a Puisne Judge of the Superior Court for the joint Districts of Abitibi, Rouyn-Noranda and Témiscamingue, in the said Province, effective Apr. 15, 1960. *Apr. 7*, Hon. Sidney Bruce Smith: to be a member of the Appellate Division of the Supreme Court of Alberta and *ex officio* a member of the Trial Division of the Court. His Hon. Hugh Cregg Farthing: to be a Judge of the Supreme Court of Alberta and a member of the Trial Division of the Supreme Court of Alberta and *ex officio* a member of the Appellate Division of the said Court. W. G. Ferguson, Q.C., Minnedosa, Man.: to be a Judge of the Court of Queen's Bench for Manitoba. *Apr. 13*, Jean-Robert Beaudoin, Q.C., Quebec, Que.: to be a Puisne Judge of the Superior Court for the District of Quebec in the Province of Quebec. *Aug. 16*, D. R. Morand, Q.C., Windsor, Ont.: to be a Judge of the Supreme Court of Ontario and a member of the High Court of Justice for Ontario, and *ex officio* a member of the Court of Appeal for Ontario. *Sept. 16*, Hon. R. R. Bell, Q.C., Charlottetown, P.E.I.: to be a Judge of the Supreme Court of Judicature of Prince Edward Island.

County and District Courts.—1959. *Oct. 8*, Hon. Robert Stafford Furlong, Chief Justice of the Supreme Court of Newfoundland: to be a District Judge in Admiralty of the Exchequer Court of Canada in and for the Admiralty District of the Province of Newfoundland. **1960.** *Jan. 28*, Hon. Dalton Courtwright Wells, a Judge of the Supreme Court of Ontario and a member of the High Court of Justice for Ontario: to be District Judge in Admiralty of the Exchequer Court of Canada in and for the Admiralty District of the Province of Ontario. *Apr. 7*, Henry S. Patterson, Q.C., Calgary, Alta.: to be a Judge of the District Court of the District of Southern Alberta in the said Province and to be a Local Judge of the Supreme Court of Alberta. *Apr. 28*, John C. Kerr, Barrister-at-Law, Brandon, Man.: to be Judge of the County Court of the Western Judicial District in the said Province, effective May 1, 1960, and a Local Judge of the Court of Queen's Bench for Manitoba. *Aug. 17*, T. H. W. Harding, District Registrar of the Supreme Court of British Columbia, Prince Rupert, B.C.: to be a Deputy Registrar of the Exchequer Court of Canada on its Admiralty Side for the Admiralty District of the Province of British Columbia, at the City of Prince Rupert. Hon. Louis McCoskery Ritchie, a Judge of the Appeal Division of the Supreme Court of New Brunswick: to be a Deputy Judge of the Exchequer Court of Canada to hear and render judgment in such causes or matters as may be entered for trial or set down for hearing and which are tried or heard during the General Sittings of the Exchequer Court of Canada to be held in Western Canada in the autumn of 1960, commencing Sept. 12.

Courts under Canadian Citizenship Act.—The following persons are appointed to act as Courts for purposes of the Canadian Citizenship Act. **1959.** *Sept. 11*, John Henry Thurnicroft, Stipendiary Magistrate, Cassiar, B.C., and Constable Joseph-Rolland-André-August Boivin, RCMP Detachment, Sept Îles, Que. *Oct. 1*, A/Staff Sergeant Edward Raymond Lysyk, RCMP Detachment, Aklavik, N.W.T. *Oct. 29*, Constable Harry David Chambers, RCMP Detachment, Atlin, B.C., and John Francis Sealey, Dawson, Y.T. **1960.** *Feb. 11*, Constable John Ellis Hiscock, RCMP Detachment, Rankin Inlet, N.W.T. *Apr. 1*, Cecil Cyril Carrothers, Q.C., London, Ont. *June 23*, Corporal Allen Harold Crawford, RCMP Detachment, Frobisher Bay, N.W.T. *July 15*, Corporal William Hamilton Preston, RCMP Detachment, Île-à-la-Crosse, Sask. *July 28*, Paul R. Jewell, Barrister and Solicitor, Elliott Lake, Ont., and Corporal William Samuel Munn, RCMP Detachment, Thompson, Man. *Aug. 11*, Robert L. Angus, Editor, Fort Nelson News, Fort Nelson, B.C., Sub-Inspector Carl Raynor Doey, RCMP Detachment, Fort Smith, N.W.T., and Constable William Fredrick Cutts, RCMP Detachment, Fort Chipewyan, Alta. *Sept. 22*, Constable Wayne Howard Canam, RCMP Detachment, Fort Chimo, Que.

Miscellaneous.—1959. *Sept. 15*, Edmond Joly de Lotbinière, Ottawa, Ont., and Patricia Sylvia Burt, Ottawa, Ont.: to be Deputies of His Excellency the Governor General for the purpose of signing certain documents. *Sept. 23*, Hon. Patrick Kerwin, Chief Justice of Canada; Hon. Robert Taschereau, a Puisne Judge of the Supreme Court of Canada; Hon. Charles Holland Locke, a Puisne Judge of the Supreme Court of Canada; Hon. John

Robert Cartwright, a Puisne Judge of the Supreme Court of Canada; and Hon. Gérald Fauteux, a Puisne Judge of the Supreme Court of Canada: to be Deputies of His Excellency the Governor General. *Oct. 1*, Frederick Thomas Mace, Assistant Deputy Minister of Veterans Affairs: to be Director of Soldier Settlement and Director, the Veterans' Land Act, effective *Oct. 5, 1959*. *Oct. 5*, Hon. D. C. Abbott, Hon. Robert Martland, Hon. Wilfred Judson and Hon. Roland A. Ritchie, Puisne Judges of the Supreme Court of Canada: to be Deputies of His Excellency the Governor General. *Oct. 6*, Hon. Ivan Cleveland Rand: to be a Commissioner under Part I of the Inquiries Act to inquire into and make recommendations concerning the Canadian Coal Producing Industry. *Oct. 8*, John P. Abel, District Registrar of the Supreme Court and Registrar in Bankruptcy, Vancouver, B.C.: to be Official Receiver for Bankruptcy Division No. 3, of the District of British Columbia. *Oct. 15*, Maurice Robitaille: to be Assistant Deputy Custodian and Counsel under the provisions of the Treaty of Peace (Germany) Order, 1920, and the Treaties of Peace (Austria and Bulgaria) Order, 1921, and the Trading with the Enemy (Transitional Powers) Act (SC 1947, c.4), effective *Oct. 15, 1959*. *Nov. 5*, Louis de la Chesnaye Audette, Chairman of the Tariff Board; Guy Favreau, Q.C., Assistant Deputy Minister of Justice; Hayim Caloff; Gaspard Côté; John Douglas Lambert; Edythe Irene MacDonald; Raymond Roger; Thurlow Bradbrooke Smith; Roger Tassé; and Gary Alexander Holland, advisory Counsel of the Department of Justice: to be Commissioners to take and administer oaths in Canada. **1960.** *Jan. 2*, Her Highness The Princess Alexandra of Kent: to be Colonel-in-Chief of The Queen's Own Rifles of Canada. *Jan. 7*, Harry Hussy, Sheet Harbour, N.S.: to be a member of the Pilotage Authority for the Pilotage District of Sheet Harbour, N.S. *Jan. 14*, Robert W. Pawley, B.S.A., London, Ont.: to be the Director of Soldier Settlement and Director, the Veterans' Land Act, effective *Jan. 15, 1960*, *vice* F. T. Mace. *Jan. 14*, Lieutenant Colonel David Currie, V.C.: to be Sergeant-at-Arms of the House of Commons, *vice* Lieutenant Colonel W. J. Franklin, resigned. *Jan. 25*, Esmond Unwin Butler, Ottawa, Ont.: to be Deputy of His Excellency the Governor General for the purposes of signing certain documents. *Jan. 28*, William David Sutherland, Registrar in Bankruptcy, Prince Rupert, B.C.: to be Official Receiver for Bankruptcy Division No. 1 of the District of British Columbia. J.-V. Tremblay, Q.C., Alma, Que.: to be a Commissioner to investigate charges of political partisanship against T.-L. Paradis, Civilian Personnel Officer, RCAF Station, Mont Apica, Que. *Jan. 29*, Andrew Maxwell Henderson: to be the Auditor General of Canada from *Mar. 1, 1960*. *Feb. 4*, Hon. Thane Alexander Campbell, Chief Justice of Prince Edward Island: to be Administrator of the Government of Prince Edward Island during the absence, illness or other inability of the Lieutenant-Governor. *Feb. 11*, Hon. John Babbitt McNair, Chief Justice of New Brunswick: to be Administrator of the Government of New Brunswick during the absence, illness or other inability of the Lieutenant-Governor. Hon. William Melville Martin, Chief Justice of Saskatchewan: to be the Administrator of the Government of Saskatchewan, during the absence, illness or other inability of the Lieutenant-Governor. *Feb. 18*, Bernard J. B. Morahan, Registrar in Bankruptcy, Victoria, B.C.: to be Official Receiver for Bankruptcy Division No. 2, of the District of British Columbia. Stanley Martin Carling, Registrar in Bankruptcy, Prince George, B.C.: to be Official Receiver for Bankruptcy Division No. 6, of the District of British Columbia. *Feb. 25*, J. P. Leopold Flynn, New Carlisle, Que.: to be a Commissioner to investigate charges of political partisanship against Constance D. Langlois, Postmistress at Port Daniel East, Que. *Mar. 31*, Justice J. V. Milvain, Supreme Court of Alberta: to be chairman of a federal conciliation board to deal with the contract dispute between the railways and the non-operating unions. *Apr. 28*, Rear Admiral H. S. Rayner: to be Chief of the Naval Staff, effective *Aug. 1, 1960*, *vice* Vice-Admiral H. G. DeWolf, retired. *Apr. 29*, T. F. W. Embleton, National Research Council; S. Berman, National Research Council; and G. H. Faye, Department of Mines and Technical Surveys: to be Assay Commissioners to examine and test coins of the currency of Canada struck at the Royal Canadian Mint during the year 1959. *May 5*, J.-Emile Vézina, a Deputy Clerk of the Magistrate's Court, Quebec, Que.: to be Deputy Registrar of the Exchequer Court

on its Admiralty side for the Quebec Registry Division of the Quebec Admiralty District. *May 12*, James Ferguson Glenn, Port Alberni, B.C., and Edward John Luckhurst, Alberni, B.C.: to be Commissioners of the Port Alberni Harbour Commissioners, effective July 1, 1960. *May 19*, François des Rivières, Ottawa, Ont.: to be Deputy Registrar of the Supreme Court of Canada. *May 31*, Air Marshal F. R. Miller, C.B.E., C.D.: to be removed from the Retired List of the Royal Canadian Air Force on reappointment in the Regular Force, with the rank of Air Marshal, effective May 31, 1960, and to be Chairman of the Chiefs of Staff Committee, effective June 1, 1960. *June 11*, Thomas Denis Skelly, Administrator, Resources Division, Department of Northern Affairs and National Resources, Ottawa: to be Deputy Registrar of the Land Titles Office for the Northwest Territories Land Registration District. Alistair MacLean, Local Registrar of the Supreme Court, Clerk of the District Court and Registrar of the Surrogate Court, Sudbury, Ont.: to be Official Receiver for Bankruptcy Division No. 2, of the District of Ontario. *June 17*, Hon. Ellen Louks Fairclough, Minister of Citizenship and Immigration: to be a Commissioner to administer, take and receive oaths, affidavits, declarations and affirmations in Canada. *June 24*, Armand G. Boisclair, Montreal: to be a director of Central Mortgage and Housing Corporation. *July 7*, Frederick Ronald Bickell, Whitehorse, Y.T., an employee of the Department of Northern Affairs and National Resources: to be Registrar of Titles for the Yukon Land Registration District. William Allen Short, Registrar of Bankruptcy, at Edmonton, Alta.: to be Official Receiver, for Bankruptcy Division No. 1 of the District of Alberta. *July 12*, Roger Duhamel, Ottawa, Ont.: to be Queen's Printer and Controller of Stationery. *July 15*, Jonathan Alfred Preston, Toronto, Ont.: to be Registrar of the Exchequer Court of Canada on its Admiralty Side for the Admiralty District of Ontario. Philippe Galipeault, Magog, Que.: to be a Commissioner to investigate charges of political partisanship against Gaston Jean-Marie, Postmaster at Dixville, Que. *July 25*, Hon. Robert Taschereau, Hon. Charles Holland Locke, Hon. J. R. Cartwright, Hon. Gérald Fauteux, Hon. Douglas C. Abbott, Hon. Ronald Marland, Hon. Wilfred Judson, Hon. Roland A. Ritchie, Edmond Joly de Lotbinière, and Patricia Sylvia Burt: to be Deputy Administrators. *Aug. 2*, Vincent Wheeler Bladen, Toronto, Ont.: to be a Commissioner under Part I of the Inquiries Act to inquire into the situation of and prospects for the industries in Canada producing motor vehicles and parts therefor. *Aug. 12*, Allen Joseph MacLeod, Director, Criminal Law Section, Department of Justice: to be Commissioner of Penitentiaries, effective Sept. 1, 1960. David Howard Woodhouse Henry, Q.C., Senior Advisory Counsel, Department of Justice: to be Director of Investigation and Research pursuant to Sect. 5 of the Combines Investigations Act, effective Sept. 1, 1960. James Riley Stone: to be Senior Deputy Commissioner of Penitentiaries, effective Sept. 1, 1960. Ralph Burgess Gibson: to be Special Adviser to the Minister of Justice on Correctional Planning, effective Sept. 1, 1960. *Aug. 17*, Lloyd Alvin Bell, Registrar and Clerk of the County Court at Barrie, Ont.: to be Official Receiver for Bankruptcy Division No. 3 in the District of Ontario. *Aug. 24*, J. Douglas Trefry, Prothonotary of the Supreme Court, Clerk of the Crown and Clerk of the County Court, Yarmouth, N.S.: to be Official Receiver for Bankruptcy Division No. 4 of the District of Nova Scotia. *Sept. 6*, Dr. Andrew Stewart, Carlyle Allison, Joseph F. Brown, Dr. Eugene A. Forsey and Leslie M. Marshall, members of the Board of Broadcast Governors: to be Commissioners under Part I of the Inquiries Act to inquire into complaints received concerning certain activities of Station CHEK-TV, Victoria, B.C. *Sept. 16*, J. Grant Glasco, Toronto, Robert Watson Sellar, Ottawa, and F.-Eugène Therrien, Montreal: to be Commissioners under Part I of the Inquiries Act to inquire into and report upon the means of promoting efficiency, economy and improved service in the operation of the departments and agencies of the government; J. Grant Glasco to be Chairman. M. Grattan O'Leary, Ottawa, John George Johnston, Toronto, and Claude-P. Beaubien, Montreal: to be Commissioners under Part I of the Inquiries Act to inquire into and report upon the recent and present position of and prospects for Canadian magazines and other periodicals; M. Grattan O'Leary to be Chairman.

Government Appointments to Miscellaneous Boards, Commissions, etc.

Agricultural Stabilization Board.—1960. *Apr. 21*, Sydney B. Williams, Ottawa: to be a member, *vice* Alexander Howard Turner, resigned. Stanislas J. Chagnon, a member of the Board, to be Vice-Chairman thereof, *vice* Alexander Howard Turner.

Air Transport Board.—1960. *Apr. 12*, A. D. McLean, Ottawa: to be again a member for a term commencing May 1, 1960.

Army Benevolent Fund Board.—1960. *Feb. 18*, Brigadier J. G. Gauvreau, D.S.O., Montreal, Que., and Captain Aubrey Peck, M.C., Vancouver, B.C.: to be members. *June 17*, Brigadier J. G. Gauvreau, D.S.O.: to be Chairman, effective July 1, 1960.

Bank of Canada.—1960. *Feb. 25*, George Graham Crosbie, St. John's, Nfld.; Noël H. DeBlois, Charlottetown, P.E.I.; and J.-René Ouimet, Montreal, Que.: to be directors for a term of three years commencing Mar. 1, 1960. *Mar. 3*, Daniel Sprague, Winnipeg, Man.: to be a director for a term of three years, effective Mar. 1, 1960.

Board of Broadcast Governors.—1959. *Dec. 7*, Leslie M. Marshall, St. John's, Nfld., and R. Louis Burge, St. Peters, P.E.I.: to be part-time members for a period of five years.

Board of Transport Commissioners for Canada.—1960. *May 26*, J. Emile Dumontier, Ottawa, Ont.: to be a member and Deputy Chief Commissioner.

Canada Council.—1960. *Jan. 25*, Marcel Faribault, Outremont, Que.: to be a member for a term of three years. *May 5*, Mrs. Angus L. Macdonald, Halifax, N.S., and Dr. Frank MacKinnon, Charlottetown, P.E.I.: to be members for a term of three years. G. Arnold Hart, President of the Bank of Montreal, Montreal, Que.: to be a member of the Investment Committee of the Canada Council. *July 15*, Dr. Claude T. Bissell, President of the University of Toronto: to be chairman, *vice* Hon. Brooke Claxton, deceased. Dr. John William Tranter Spinks, Saskatoon, Sask.; Dr. George Edward Hall, London, Ont.; Sir Ernest MacMillan, Toronto, Ont.; and Dr. N. A. MacKenzie, Vancouver, B.C.: to be members for a term of three years.

Canada Labour Relations Board.—1959. *Nov. 12*, Donald MacDonald, Secretary-Treasurer, Canadian Labour Congress, Ottawa, Ont.: to be a member as a representative of employees.

Canadian Broadcasting Corporation.—1960. *Jan. 26*, Captain William Edward Slade Briggs, Halifax, N.S.: to be Vice-President.

Canadian Maritime Commission.—1960. *Feb. 25*, George A. Scott and J. C. Rutledge, Ottawa; to be members.

Canadian Pension Commission.—1959. *Nov. 12*, Norman Loris Pickersgill: to be an *ad hoc* member for a term of one year from Feb. 1, 1960. **1960.** *Jan. 25*, Brigadier C. B. Topp, C.B.E., D.S.O., M.C.; to be an *ad hoc* member for a term of one year from Mar. 15, 1960. *Apr. 21*, David G. Decker: to be an *ad hoc* member for a term of one year from May 30, 1960. *July 12*, Norman Loris Pickersgill: to be an *ad hoc* member for a term of one year from Feb. 1, 1961.

Defence Research Board.—1960. *May 3*, Dr. J. Tuzo Wilson, Toronto, Ont.; Cyril A. Peachey, Montreal, Que.; Dr. John F. McCreary, Vancouver, B.C.; and Dr. George S. Field: to be members for a term expiring Apr. 1, 1963.

Dominion Council of Health.—1959. *Dec. 19*, John W. Bruce, O.B.E., Willowdale, Ont.: to be a member for a term of three years from Dec. 13, 1959.

Farm Credit Corporation.—1959. *Dec. 10*, Thomas J. Rutherford, Lucien Lalonde, A. Sinclair Abel and Alexander H. Turner: to be members for a term of one year, effective Oct. 5, 1959; Thomas J. Rutherford to be Chairman.

Great Lakes Fisheries Commission.—1959. *Dec. 22*, William John Knox Harkness, Toronto, Ont., and Arthur Owen Blackhurst, Port Dover, Ont.: to be Commissioners for Canada for a term ending Dec. 1, 1961. **1960.** *Aug. 31*, John Richardson Dymond, Toronto, Ont.: to be a Commissioner for Canada for a term of two years from Sept. 1, 1960.

Historic Sites and Monuments Board of Canada.—1960. *Mar. 10*, Richard Y. Secord, Edmonton, Alta.: to be again a member representing the Province of Alberta for a term of five years from Apr. 12, 1960. *Apr. 21*, Dr. C. Bruce Fergusson: to be again a member representing the Province of Nova Scotia for a term ending Apr. 14, 1965. *May 3*, Dr. Margaret A. Ormsby, Vancouver, B.C.: to be a member representing the Province of British Columbia for a term of three years from May 19, 1960. *Aug. 17*, Dr. C. Bruce Fergusson, a member, to be Chairman for a term ending May 19, 1963. *Sept. 13*, William David Smith, Brandon, Man.: to be a member representing the Province of Manitoba.

International Pacific Halibut Commission.—1960. *Jan. 8*, Richard Nelson, Vancouver, B.C.: to be a member for a term ending Oct. 31, 1961. Harold Helland, Prince Rupert, B.C.: to be a member for a term ending Oct. 31, 1960. *Sept. 22*, Harold Helland, Prince Rupert, B.C.: to be again a member for a term of one year from Nov. 1, 1960.

International Pacific Salmon Fisheries Commission.—1960. *Aug. 11*, W. R. Hourston, Area Director of Fisheries for the Pacific Area, Vancouver, B.C.: to be a member as the representative of the Department of Fisheries. A. J. Whitmore, Burnaby, B.C.: to be a member for a term of two years.

National Capital Commission.—1960. *Jan. 14*, J. Gardner Boulton, Kamloops, B.C.: to be a member for a term ending Feb. 6, 1961. R.-D. Chénier, Eastview, Ont.: to be a member for a term ending Feb. 6, 1962. P.-Horace Boivin, Granby, Que.: to be a member for a term ending Feb. 6, 1963. *Apr. 7*, Alan K. Hay, General Manager of the National Capital Commission: to be a member for a term of two months and to be also Chairman of the Commission for the said term. *Sept. 20*, Eric W. Thrift, Winnipeg, Man.: to be General Manager from Oct. 24, 1960.

National Energy Board.—1960. *July 7*, Maurice Royer, Quebec, Que.: to be a member for a term of seven years from Sept. 1, 1960.

National Film Board.—1960. *July 12*, Charles Stein, Q.C., Under Secretary of State, Ottawa, Ont.: to be again a member for a term of three years from July 18, 1960. Marcel Cadieux, Assistant Under Secretary of State for External Affairs, Ottawa, Ont.: to be again a member for a term of three years from Aug. 1, 1960. *Oct. 6*, Charles S. Band, Toronto, Ont.: to be again a member for a term of three years from Oct. 14, 1960.

National Gallery of Canada.—1959. *Oct. 1*, Thomas Maher, Q.C., Quebec, Que.; Mrs. Hugh MacKay, Saint John, N.B.; and J. Grant Glassco, Toronto, Ont.: to be members of the Board of Trustees; Thomas Maher to be Chairman. *Oct. 23*, Frank S. Panabaker, Ancaster, Ont.: to be a member of the Board of Trustees.

National Harbours Board.—1960. *Sept. 7*, Howard A. Mann, Moncton, N.B.: to be a member and to be Vice-Chairman.

National Library Advisory Council.—1960. *Jan. 8*, John S. Russell, Winnipeg, Man.; Dr. Seraphin Marion, Ottawa, Ont.; and Mrs. Donald E. Lidstone, Summerside, P.E.I.: to be members for a term of four years from Jan. 1, 1960.

National Parole Board.—1960. *Aug. 12*, Mary Louise Lynch, a member of the New Brunswick Bar, Saint John, N.B.: to be a member for a term of ten years from Oct. 1, 1960.

National Research Council.—1960. *May 3*, Dr. Pierre-R. Gendron, Dean of the Faculty of Pure and Applied Science, University of Ottawa, Ottawa, Ont.; Dr. Paul-Antoine Giguère, F.R.S.C., Director of the Chemistry Department, Faculty of Science, Laval University, Quebec, Que.; Dr. P. Lorrain, Head, Department of Physics, Faculty of Science, University of Montreal, Montreal; L.H.J. Shebeski, Professor of Plant Science, University of Manitoba, Winnipeg, Man.; Dr. J. H. Shipley, Vice-President and Director, Research and Development, Canadian Industries Limited, Montreal, Que.; and Dr. F. J. Toole, Head of the Department of Chemistry and Dean of the School of Graduate Studies, University of New Brunswick, Fredericton, N.B.: to be members.

Northern Canada Power Commission.—1960. *Feb. 11*, Joseph Frederick Parkinson, Economic Adviser, Office of the Deputy Minister of Finance: to be a member.

Northern Ontario Pipe Line Crown Corporation.—1959. *Dec. 4*, Gerald W. Green, Department of Trade and Commerce, Ottawa: to be a Director.

Restrictive Trade Practices Commission.—1959. *Nov. 27*, Pierre Carignan, Q.C., Montreal, Que.: to be a member from Feb. 15, 1960 or such earlier date as he may be able to assume the duties of such office.

Royal Canadian Mounted Police.—1960. *Feb. 23*, Deputy Commissioner Clifford Walter Harvison: to be Commissioner, effective Apr. 1, 1960.

Royal Commission on Transportation.—1959. *Dec. 22*, Murdoch Alexander MacPherson, Q.C.: to be Chairman, *vice* Hon. Charles P. McTague.

St. Lawrence Seaway Authority.—1959. *Sept. 23*, Bennett J. Roberts: to be President for a term of one year from Aug. 1, 1959. **1960.** *June 7*, Robert James Rankin, Ottawa, Ont.: to be President for a term of five years from Aug. 1, 1960. *Sept. 20*, Pierre Camu, Quebec, Que.: to be a member from Oct. 15, 1960, *vice* J. C. Lessard.

Unemployment Insurance Commission.—1960. *Apr. 26*, Laval Fortier, Deputy Minister of Citizenship and Immigration: to be Chief Commissioner and Chief Executive Officer of the Commission.

War Veterans Allowance Board.—1960. *June 17*, J.-E.-Roger Roberge, Lévis, Que.: to be a member from July 1, 1960. *Sept. 28*, William Taylor Cromb, Winnipeg, Man.: to be a member and chairman from Oct. 15, 1960.

PART IV.—FEDERAL LEGISLATION, 1960

This classified list of federal legislation has been compiled from the Statutes. Naturally in summarizing material of this kind it is not always possible to convey the full implication of the legislation. The reader who is interested in any specific Act is therefore referred to the Statutes of Canada in the given volume and chapter.

**Legislation of the Third Session of the Twenty-Fourth Parliament,
Jan. 14, to Aug. 10, 1960**

Subject, Chapter and Date of Assent	Synopsis
8-9 Eliz. II	
Agriculture—	
1 Jan. 28	<i>The Prairie Grain Loans Act</i> provides, by way of a guarantee for bank loans made before June 1, 1960, short-term credit to grain producers of the Prairie Provinces to meet temporary financial difficulties encountered during the 1959-60 crop year from inability to thresh their grain.
2 Jan. 28	<i>The Prairie Grain Provisional Payments Act</i> authorizes the Canadian Wheat Board to make payments for the 1959-60 crop year in respect of future deliveries of unthreshed grain.
14 May 27	<i>The Feeds Act</i> revises the Feeding Stuffs Act (repealed) to meet recent trends and developments in the production and merchandising of feeds. No substantive changes in policy are made in this revised Act.
Finance—	
3 Mar. 9	<i>Appropriation Act No. 1, 1960</i> grants certain sums of money for the public service of the financial year ending Mar. 31, 1960.
5 Mar. 31	<i>Appropriation Act No. 2, 1960</i> grants certain sums of money for the public service of the financial year ending Mar. 31, 1960.
6 Mar. 31	<i>Appropriation Act No. 3, 1960</i> grants certain sums of money for the public service of the financial year ending Mar. 31, 1960.
11 May 27	<i>Appropriation Act No. 4, 1960</i> grants certain sums of money for the public service of the financial year ending Mar. 31, 1960.
13 May 27	<i>An Act to amend the Federal-Provincial Tax-Sharing Arrangements Act</i> provides certain alternative arrangements for payment, either by Canada through the Canadian Universities Foundation or directly by a province, of the grants to institutions of higher learning presently paid under the authority of the Appropriation Act.
16 June 9	<i>Appropriation Act No. 5, 1960</i> grants certain sums of money for the public service of the financial year ending Mar. 31, 1960.
48 Aug. 10	<i>Appropriation Act No. 6, 1960</i> grants certain sums of money for the public service of the financial year ending Mar. 31, 1961 (main supply).
Government—	
7 Mar. 31	<i>An Act to amend the Canada Elections Act</i> grants the franchise to Indians without restriction if they are qualified as other electors.
8 Mar. 31	<i>An Act to amend the Indian Act</i> is a consequential amendment to the Indian Act required upon the passing of the above amendment to the Canada Elections Act which gives to Indians the right to vote in federal elections without restriction if they are qualified as other electors. Both amendments take effect at the same time.
20 June 9	<i>An Act to amend the Northwest Territories Act</i> establishes a Court of Appeal for the Northwest Territories, authorizes the Territorial Court of the Northwest Territories to sit in the Yukon Territory in civil matters, provides for the appointment, remuneration and allowances of deputy judges of the Territorial Court and provides for the general application of game legislation in the Northwest Territories.
24 June 9	<i>An Act to amend the Yukon Act</i> increases the number of members of the Council of the Yukon Territory from five to seven and creates an advisory committee on finance. It establishes a Court of Appeal for the Yukon Territory, authorizes the Territorial Court of the Yukon Territory to sit in the Northwest Territories in civil matters, provides for the appointment, remuneration and allowances of deputy judges of the Territorial Court and provides for the general application of game legislation in the Yukon Territory.
39 Aug. 1	<i>The Canada Elections Act</i> re-enacts legislation respecting the franchise of electors and the election of members of the House of Commons, incorporating therein the amendments recommended by the Standing Committee on Privileges and Elections as presented to Parliament on June 13, 1960, more particularly with respect to advance polls and generally for the purpose of facilitating the administration of the Act. The former Canada Elections Act is repealed.
31 July 7	<i>The International Boundary Commission Act</i> gives legislative authority to the Commission permitting it to carry out more effectively in Canada its functions under the treaty of 1925.

**Legislation of the Third Session of the Twenty-Fourth Parliament,
Jan. 14, to Aug. 10, 1960—continued**

Subject, Chapter and Date of Assent	Synopsis
Government—concl.	
41 Aug. 1	<i>The Department of Forestry Act</i> authorizes the constitution of a Department of Forestry and provides for its management and direction by a Minister of Forestry, the employment of other officials and the transfer of staffs hitherto performing duties in the field of forestry in the Departments of Agriculture and Northern Affairs and National Resources. The Act also provides for the establishment and regulation of forest experimental areas on Crown lands.
44 Aug. 10	<i>The Canadian Bill of Rights</i> is designed to ensure in Canada the recognition and protection of human rights and fundamental freedoms.
4 Mar. 9	<i>An Act to amend the Department of Justice Act</i> authorizes the appointment of two Associate Deputy Ministers of Justice.
37 July 14	<i>An Act to amend the Criminal Code</i> prohibits possession of a Hornet survival rifle and permits evidence at a preliminary inquiry to be taken by sound recording apparatus where such is authorized by provincial legislation for use in civil cases.
45 Aug. 10	<i>An Act to amend the Combines Investigation Act and the Criminal Code</i> makes important revisions that may be classified as: (1) Substantive amendments—relating to conspiracy and unfair trade practices, especially in relation to the operations of small businesses. (2) Procedural amendments—relating to new jurisdiction conferred on the Exchequer Court of Canada; permitting a restraining or dissolution order without a conviction; requiring the Commission to make certain additional specific findings where it appears that a combine has existed; also amendments consolidating the related provisions of the Criminal Code and the Combines Investigation Act. (3) Consequential amendments—particularly re-statement of definitions made necessary as a result of consolidation of legislation and amendments dealing with changes in cross-references.
46 Aug. 10	<i>An Act to amend the Judges Act</i> authorizes salaries for four additional judges of the Quebec Superior Court; provides for the grant of an annuity to judges of provincial courts who, in accordance with the proposed amendment to the BNA Act, will cease to hold office upon attaining the age of 75 years; removes anomalies in the law relating to the grant of annuities to judges and their widows; and alters the method of payment of travelling allowances to judges.
47 Aug. 10	<i>An Act to amend the Judges Act</i> authorizes salary for one additional judge of the Supreme Court of Judicature of Prince Edward Island.
Revenue—	
18 June 9	<i>An Act to amend the Canada-Netherlands Income Tax Agreement Act, 1957</i> implements the Supplementary Convention entered into between Canada and the Netherlands modifying the Convention between Canada and the Kingdom of the Netherlands for the avoidance of double taxation and the prevention of fiscal evasion with respect to taxes on income, signed at Ottawa Apr. 2, 1957.
27 July 7	<i>An Act to amend the Customs Tariff</i> implements Budget Resolutions on the Customs Tariff.
29 July 7	<i>An Act to amend the Estate Tax Act</i> implements Budget Resolutions on the Estate Tax Act.
30 July 7	<i>An Act to amend the Excise Tax Act</i> implements Budget Resolutions on the Excise Tax Act.
43 Aug. 1	<i>An Act to amend the Income Tax Act</i> implements Budget Resolutions on the Income Tax Act.
Trade—	
12 May 27	<i>An Act to amend the Export and Import Permits Act</i> extends the provisions of the Act for a further period of three years, to July 31, 1963.
17 June 9	<i>The Australian Trade Agreement Act, 1960</i> implements the Trade Agreement between the Government of Canada and the Government of the Commonwealth of Australia, signed at Canberra Feb. 12, 1960.
Transportation—	
19 June 9	<i>The Nanaimo Harbour Commissioners Act</i> authorizes the establishment of a Corporation to manage and develop a harbour at the city of Nanaimo, B.C.
21 June 9	<i>The Oshawa Harbour Commissioners Act</i> authorizes the establishment of a Corporation to manage and develop a harbour at the city of Oshawa, Ont.

**Legislation of the Third Session of the Twenty-Fourth Parliament,
Jan. 14, to Aug. 10, 1960—continued**

Subject, Chapter and Date of Assent	Synopsis
Transportation—concluded	
22 June 9	<i>An Act to amend the Trans-Canada Highway Act</i> extends until Mar. 31, 1964 the period during which contributions or payments may be made to the provinces under the Act, and to Dec. 31, 1963 the period during which construction costs may be incurred; authorized maximum expenditure is increased by \$50,000,000 to \$400,000,000.
23 June 9	<i>An Act to amend the Windsor Harbour Commissioners Act</i> extends the boundaries of the Harbour of Windsor to include that part of the Detroit River extending to the International Boundary and fronting on the municipality of Ojibway.
25 July 7	<i>The Canadian National Railways Financing and Guarantee Act, 1960</i> provides moneys to meet certain capital expenditures of the CNR for the period Jan. 1, 1960 to June 30, 1961 and authorizes the guarantee of certain securities to be issued by the CNR.
26 July 7	<i>The Canadian National Toronto Terminals Act</i> authorizes the CNR to construct certain railway terminal facilities at and in the vicinity of Toronto at an estimated cost of \$87,000,000, and guarantees the principal of and interest on securities that may be issued to finance such construction.
33 July 7	<i>The LaSalle-Cauchonawaga Bridge Act</i> authorizes the Province of Quebec to construct and maintain a bridge across the St. Lawrence River from a point at or near the Town of LaSalle, Que., to a point at or near the Village of Cauchonawaga, Que.
35 July 7	<i>An Act to amend an Act to amend the Railway Act</i> extends for a three-year period to Jan. 31, 1961 the period of time during which reflective markings are to be placed on railway cars and other work carried out for public protection at level crossings. Under a previous amendment the time was extended for a three-year period to Jan. 31, 1958.
40 Aug. 1	<i>An Act to amend the Canada Shipping Act</i> implements an arrangement with the United States to co-ordinate the control of marine pilotage on the Great Lakes in the interests of safety.
42 Aug. 1	<i>An Act to amend the Freight Rates Reduction Act</i> extends for not more than nine months to Apr. 30, 1961, the period during which the revised rates under the Act are applicable and increases the authorized expenditure under the Act by an additional \$15,000,000 to \$35,000,000.
Welfare—	
34 July 7	<i>An Act to amend the Old Age Security Act</i> permits payment of pension in prescribed circumstances to pensioners absenting themselves from Canada beyond the periods previously prescribed, and provides also certain saving and transitional provisions to protect the rights of pensioners so absent on the date the amending legislation becomes effective.
36 July 7	<i>An Act to amend the War Veterans Allowance Act, 1952</i> permits the payment of the allowance to a recipient who leaves Canada, provides certain saving and transitional provisions to protect the rights of recipients so absent on the date of the amending legislation, and establishes residence qualifications for Imperial and Allied veterans who served during World War II.
Miscellaneous—	
9 Mar. 31	<i>An Act to amend the National Energy Board Act</i> makes two amendments to the Act, the first with respect to tolls on the transportation of gas within a province by an inter-provincial company and the second extending the date of expiry of licences for exportation of power issued under a repealed Act to allow sufficient time for Board hearings relating to the issue of new licences.
10 Mar. 31	<i>An Act to amend the National Housing Act</i> increases from \$4,000,000,000 to \$6,000,000,000 the aggregate maximum amount of insured loans, and increases from \$1,000,000,000 to \$1,500,000,000 the maximum amount that may be advanced or paid to the Corporation for specified purposes.
15 May 27	<i>An Act to repeal certain Fisheries Laws of Newfoundland</i> repeals certain Acts of that province which, under the Terms of Union, remained in effect until the Parliament of Canada otherwise provided. Since the Statutes of Canada relating to fisheries have now been brought into force in Newfoundland, the continuation of pre-Confederation Newfoundland fisheries laws is no longer necessary.

**Legislation of the Third Session of the Twenty-Fourth Parliament
Jan. 14, to Aug. 10, 1960—concluded**

Subject, Chapter and Date of Assent	Synopsis
Miscellaneous—conc.	
28 July 7	<i>An Act to amend the Emergency Gold Mining Assistance Act</i> extends the application of the Act to the years 1961, 1962 and 1963 and makes a minor administrative adjustment.
32 July 7	<i>The International Development Association Act</i> authorizes participation by Canada in the International Development Association and provides for the payment of the subscription required from Canada as a member, not to exceed the Canadian equivalent of U.S. \$37,830,000.
38 July 14	<i>An Act to amend the Public Service Superannuation Act</i> makes a number of revisions with respect to contributions, pensionable service, benefits, the calculation of annuities payable to widows and children, persons re-employed, medical examinations, transferred pensionable employees, contributions to the Retirement Fund and reciprocal transfer agreements, and with respect to certain other changes in connection with the administration of the Act.

PART V.—CANADIAN CHRONOLOGY

Events in the general chronology from 1497 to 1866 are given in the 1951 Year Book, pp. 46-49; from 1867 to 1953 in the 1954 Year Book, pp. 1259-1264; for 1954 in the 1955 Year Book, pp. 1329-1330; for 1955 in the 1956 edition, pp. 1233-1234; for 1956 in the 1957-58 edition, p. 1270; and for 1957 in the 1959 edition, p. 1240. References regarding federal and provincial elections or changes in legislatures or ministries are not included in the following listing but may be found in Chapter II on Constitution and Government and in the Appendix.

1958. Jan. 1, Celebrations to commemorate British Columbia's centennial year began. Jan. 16, Hon. Lester B. Pearson chosen as national leader of the Liberal Party at convention in Ottawa. Jan. 17, Royal Commission appointed to study dispute between the CPR and the Brotherhood of Locomotive Firemen and Enginemen, headed by Justice Kellock. Jan. 23, Queen Mother Elizabeth stopped briefly in Montreal and Vancouver on round-the-world tour. Feb. 1, United States Army successfully launched first American earth satellite—*Explorer*. Feb. 4, Kellock Royal Commission declared that firemen were unnecessary on diesel engines used by the CPR in its freight and yard operations. Feb. 17, Rt. Hon. Louis S. St. Laurent, Prime Minister of Canada from 1948-1957, announced his retirement from active politics. Apr. 5, Ripple Rock in Seymour Narrows near Campbell River, B.C., worst underwater shipping hazard on the West Coast, removed by underwater explosion. Apr. 24-May 20, Trade mission from the United Kingdom toured Canada exploring ways of expanding British sales in this country. Apr. 30, Celebration in Montreal of the 300th anniversary of the first school established in that city by Marguerite Bourgeoys in 1658. May 28-June 4, President Theodor Heuss of the Federal Republic of Germany made state visit to Canada, the first German Head of State ever to do so. June 12, Prime Minister Macmillan of the United Kingdom addressed a joint session of the Senate and the House of Commons during a visit to Ottawa. June 21-July 9, Celebrations in Quebec City marking the 350th anniversary

on July 1 of its founding in 1608 by Samuel de Champlain. July 1, Canadians celebrated the 91st anniversary of Confederation. Blasting of the cofferdam holding back the waters of the St. Lawrence River touched off the creation of the 100-sq. mile St. Lawrence power pool, permitting, within a few days, the operation of the first generators of the new hydro development and the use of two seaway locks on the U.S. side of the River and of the Canadian seaway lock at Iroquois. Inauguration of Canada's new microwave relay system, completed from coast to coast. Federal-Provincial Hospital Plan went into effect in British Columbia, Alberta, Saskatchewan, Manitoba and Newfoundland. July 5, Stephen Leacock Memorial Home at Orillia, Ont., officially opened. July 8-11, President Eisenhower of the United States in Ottawa for discussions that resulted in the establishment of a joint Canada-United States Cabinet Committee on defence. July 12-Aug. 11, Princess Margaret toured Canada from Victoria to Halifax, visiting seven provinces on her first North American visit. July 13, External Affairs Minister Sidney Smith in Washington for talks with British Foreign Secretary Selwyn Lloyd and United States Secretary of State John Foster Dulles regarding the tense Middle East situation. July 19-23, Prime Minister Nkrumah of Ghana, visited Montreal and Ottawa and addressed a joint sitting of the Senate and the House of Commons. July 25, The Government of Canada signed the agreement previously ratified by the Government

- of Saskatchewan which authorized commencement of construction work on the South Saskatchewan River Project. *Aug. 20*, The Canadian Board of Geographical Names decided on "Lake St. Lawrence" as the name for the new 35-mile-long lake created by hydro power development on the St. Lawrence River. *Sept. 1-5*, Eighth Quinquennial Congress of the Universities of the British Commonwealth held in Montreal—its first meeting outside the United Kingdom. *Sept. 5*, The Robert H. Saunders Powerhouse officially opened by Canadian and American dignitaries. *Sept. 7*, World Power Conference opened in Montreal attended by 1,200 delegates from 51 countries. *Sept. 11*, Death of Camillien Houde, seven times mayor of Montreal. *Sept. 15-26*, Commonwealth Trade and Economic Conference held in Montreal. *Sept. 16*, External Affairs Minister Sidney Smith headed Canada's delegation to the 13th General Assembly of the United Nations in New York. *Oct. 1*, Canada House in New York City formally opened at a ceremony presided over by External Affairs Minister Sidney Smith, Mayor Robert Wagner of New York and the Hon. Ray Lawson. *Oct. 11-13*, Prime Minister Walter Nash of New Zealand in Ottawa to confer with Prime Minister Diefenbaker. *Oct. 15*, Mrs. Golda Meir, Israeli Foreign Minister, in Ottawa to confer with Canada's Prime Minister and Minister of External Affairs. *Oct. 22*, Miss Blanche Margaret Meagher appointed Ambassador to Israel, the first Canadian woman in an ambassadorial post. *Oct. 23*, Seventy-four lives lost in a coal mine explosion at Springhill, N.S.; 81 men were rescued the first day, 12 on Oct. 30 and seven on Nov. 1. *Oct. 25*, An explosion, attributed to gas leakage, caused extensive damage in downtown Ottawa. *Oct. 28-31*, Prince Philip visited Ottawa to attend the Conference of the English-Speaking Union of which he is President. *Oct. 28-Dec. 19*, The Prime Minister, accompanied by Mrs. Diefenbaker, toured European and Commonwealth countries. *Dec. 31*, Trade Union Local 2-254 of The International Woodworkers of America struck against its employer, the Anglo-Newfoundland Development Company, following the latter's rejection of the recommended wage increase by a Conciliation Board under the Newfoundland Labour Relations Act. When violence accompanied the strike, the Newfoundland Government with the unanimous support of the Assembly enacted the Trade Union (Emergency Provisions) Act of 1959, decertifying the two locals (2-254 and 2-255) of the IWA, and announced the organization of a rival union.
- 1959.** *Jan. 1*, Federal-Provincial Hospital Plan went into effect in Ontario and Nova Scotia. *Feb. 20*, Production of the *CF-105 Arrow* discontinued. *Feb. 23*, Celebration of the 50th anniversary of flight in Canada at Bras d'Or Lake, N.S., scene of the first "Silver Dart" flight. *Mar. 17*, Death of Dr. Sidney Earle Smith, Minister of the Department of External Affairs. *Mar. 18*, Prime Minister Macmillan of the United Kingdom arrived in Ottawa for discussions on the situation in Germany, following talks in Russia and France and en route to Washington. *Apr. 10*, Canada's first privately owned and operated nuclear research reactor officially opened at McMaster University. *Apr. 25*, The St. Lawrence Seaway opened to navigation. *Apr. 26*, Premier Castro of Cuba visited Montreal. *May 20*, Prime Minister Menzies of Australia visited Ottawa. *June 5-10*, The Atlantic Congress, consisting of over 600 Parliamentarians and distinguished citizens from NATO countries met at London, Eng., to examine the record of the first ten years of NATO and discuss prospects for the next ten years; 60 Canadian delegates attended. *June 18*, Her Majesty Queen Elizabeth and Prince Philip arrived at Torbay, Nfld., to begin a 45-day coast-to-coast tour of Canada. *June 20*, Thirty-five fishermen lost their lives in a violent storm in Northumberland Strait. *June 26*, The St. Lawrence Seaway officially opened by Her Majesty Queen Elizabeth and President Eisenhower of the United States in a historic ceremony at St. Lambert, Que. *July 1*, Federal-Provincial Hospital Plan went into effect in New Brunswick. *July 2*, Japan and Canada signed pact pledging co-operation in the peaceful uses of atomic energy. *July 9*, Canadian Brotherhood of Railway, Transport and General Workers was declared by the Canadian Labour Relations Board the bargaining agent of a system-wide unit of operating and maintenance employees of the St. Lawrence Seaway Authority. *July 15-22*, A Canadian delegation, headed by the Hon. George Drew, attended the Commonwealth Education Conference in Oxford, England, implementing the program proposed by Canada at the Commonwealth Economic Conference held at Montreal in September 1958. *July 17*, The Canadian Government announced the creation of an Emergency Measures Organization to function in the event of a sudden nuclear war. *July 18*, The Canadian Government announced the creation of a five-man National Energy Board to have wide powers over the oil and natural gas industries and international electric power connections. *July 22*, Official opening of the Queen Elizabeth Power Generating Station (Saskatchewan Power Corporation) at Saskatoon by Her Majesty Queen Elizabeth. *Aug. 1*, The Federal Cabinet met in Halifax, N.S., to bid farewell to Her Majesty Queen Elizabeth and Prince Philip who left by air for London, England. *Aug. 17*, Northern Affairs Minister Hamilton announced the discovery of oil at Eagle Plain, Yukon Territory—the first such discovery in the Yukon. *Sept. 7*, Death of Maurice Duplessis, Premier of Quebec Province for the past 18 years, at Schefferville, Que. *Sept. 9*, Announcement that Canada's first large nuclear power station will be built on the shores of Lake Huron, nine miles north of Kincardine at an estimated cost of \$60,000,000. *Sept. 10*, The Hon. Paul Sauvé chosen to succeed the late Maurice Duplessis as Premier of the Province of Quebec. *Sept. 13*, Two-hundredth anniversary of the battle of the Plains of Abraham. *Sept. 16*, Major-General George P. Vanier, D.S.O., M.C., C.D., appointed Governor General of Canada to succeed the Rt. Hon. Vincent Massey; investiture took place in the Senate. Fourteenth session of the General Assembly of the United Nations opened in New York. *Sept. 22*, Dr. Wilder Penfield, Director of the Montreal Neurological Institute and Dr. E. W. R. Steacie, Chairman of the National Research Council, received diplomas of membership in the Academy of Sciences of the U.S.S.R., the first Canadians so honoured. *Sept. 24*, External Affairs Minister Green, head of the Canadian Delegation at the UN General Assembly, presented Canada's views on major world problems, particularly with respect to disarmament and the need for a world program on radiation hazards. *Sept. 28*, Death of A. R. Mosher, Honorary

President of the Canadian Labour Congress and chief founder of the Canadian Brotherhood of Railway Employees in 1907. *Oct. 1*, Federal-Provincial Hospital Plan went into effect in Prince Edward Island. *Oct. 5*, John A. MacAulay of Winnipeg elected Chairman of the Board of Governors of the International Red Cross, the first Canadian to be named to the post. *Oct. 6*, Prime Minister Diefenbaker announced grant of \$20,000 to the Japanese Red Cross Society for relief of typhoon victims. *Oct. 15-16*, Dominion-Provincial Conference held in Ottawa; provincial demands for an immediate increase in tax-sharing payments from the Federal Government rejected. *Oct. 22*, Hearings by the Royal Commission on Transportation began in Quebec City. *Nov. 4*, Alberta Government announced a provincial order banning the use of trading stamps and similar promotional schemes. Agreement on exchange of science experts signed in Moscow by the President of the National Research Council of Canada and the President of the Soviet Academy of Science. *Nov. 6*, Canadian Government announced new program extending to Nov. 30, 1966, the period in which approximately \$1,000,000,000 in uranium, undelivered to date under contract, can be produced; this program resulted from the decision of the U.S. Atomic Energy Commission and the U.K. Atomic Energy Authority not to exercise their options to buy beyond Mar. 31, 1963. *Nov. 9*, United Kingdom removed most of the remaining wartime restrictions on foreign imports, except those from Japan and Communist-bloc members; the removal is of special importance to Canadian manufacturers. *Nov. 12*, Douglas J. Mackintosh, Granum, Alta., won title of World Wheat King at Royal Winter Fair, Toronto. *Nov. 16*, Premier Frost of Ontario cut sod for extension of Toronto's subway. *Nov. 17*, Agreement reached with the Soviet bloc on a Canadian proposal for a world-wide study on atomic radiation. *Nov. 18*, Deputy Premier Anastas Mikoyan of U.S.S.R. arrived in Halifax by air for overnight visit en route to Mexico. Polish Legation announced agreement to buy additional wheat and barley on three-year credit terms, bringing total grain purchases from Canada in 1959 to more than \$30,000,000. Board of Broadcast Governors announced TV programs must have 45 p.c. Canadian content from Apr. 1, 1961 and 55 p.c. from Apr. 1, 1962. *Nov. 20*, Long-standing problem of federal grants to Quebec universities solved in agreement reached between Federal and Quebec Governments. *Nov. 26*, Indians in N.W.T. placed on equal basis with white persons in liquor purchase. *Nov. 25*, Prof. Donald C. Creighton, University of Toronto, named member of the Monckton Commission (U.K.) to investigate the constitutional development of the Federation of Rhodesia and Nyasaland. *Dec. 2*, Six governors of York University named, marking the official birth of Ontario's tenth university; Dr. Murray G. Ross, Vice-President of the University of Toronto, appointed President on Dec. 3. Ernest L. Bushnell announced resignation as CBC Vice-President. *Dec. 15*, Arrival by air in Toronto of the first group of European tubercular refugees and their families, part of Canada's share in World Refugee Year. *Dec. 16*, Death of J. J. Bowlen, Lieutenant-Governor of Alberta. *Dec. 17*, National Housing Act mortgage interest rate raised to 6½ p.c. from 6 p.c. *December*, Lieut.-Gen. E. L. M. Burns leaves command of the UN Emergency Force

in the Middle East to serve as Canadian representative on the Ten-Nation Disarmament Committee.

- 1960.** *Jan. 1*, Discrimination against dollar imports into Finland ended. Toll charge of \$64 introduced for each aircraft flying an international route over Canada to cover cost of providing them with navigational aids. *Jan. 2*, Death of Hon. Jean-Paul Sauvé, Premier of Quebec for 114 days. *Jan. 4*, Willis Rodney Whitney Award presented to Dr. Morris Cohen of the National Research Council by the U.S. National Association of Corrosion Engineers for outstanding scientific achievement in corrosion. *Jan. 6*, Charles F. Comfort, mural painter and Canadian Army artist in the Second World War, named Director of the National Gallery, succeeding Alan Jarvis. *Jan. 7*, Antonio Barrette, former Quebec Labour Minister, became Premier of Quebec. *Jan. 8*, Her Majesty Queen Elizabeth approved appointment of Princess Alexandra of Kent as Colonel-in-Chief of the Queen's Own Rifles of Canada. *Jan. 19*, Announcement made that Canada's second nuclear research centre, to be known as the Whiteshell Nuclear Research Establishment, will be built on the east bank of the Winnipeg River and 60 miles northeast of Winnipeg. Canada meeting India's request for \$25,000,000 worth of Canadian commodities and equipment under the Colombo Plan. *Jan. 21*, Prime Minister Kishi of Japan visited Ottawa; trade relations were the central theme of discussions with Prime Minister Diefenbaker and members of the Cabinet. *Jan. 30*, Discrimination against dollar imports in favour of OEEC countries of Europe ended by Denmark. *Feb. 3*, Announcement that Canada will contribute \$25,000,000 toward the building of a transpacific cable as part of a world-girdling Commonwealth communication system. *Feb. 7*, Death of Dr. Robert Hamilton Coats, founder of the Dominion Bureau of Statistics and Dominion Statistician from 1918-42. *Feb. 8*, Federal-provincial conference on centennial celebrations agreed to support an application by the City of Montreal for a World Fair in that area in 1967. Her Majesty Queen Elizabeth announced that future generations of her family, except those in direct line to the Throne, will bear the surname Mountbatten-Windsor. *Feb. 9-10*, A conference between the Federal Government and the British Columbia Government ended in agreement on plans for the development of the Columbia River. *Feb. 17*, New National Gallery of Canada officially opened by Prime Minister Diefenbaker. *Feb. 19*, A second son was born to Her Majesty Queen Elizabeth II and Prince Philip—named on Mar. 22 Prince Andrew Albert Christian Edward. *Feb. 26*, Quebec Legislative Council approved an amendment to a government Bill providing Quebec universities with the means of accepting the \$41,000,000 in federal grants being held in trust in Ottawa. Engagement of Her Royal Highness Princess Margaret to Antony Armstrong-Jones announced by Queen Mother Elizabeth. Anne Heggveit of Ottawa won the women's slalom at Olympic Games in Squaw Valley, California—the first Canadian to win an Olympic gold medal for skiing; the victory also gave her the world combined title and the world slalom title. Barbara Wagner and Bob Paul of Toronto won the Olympic gold medal in pairs competition in figure skating. Donald Jackson of Oshawa won bronze medal for

third-place finish in men's figure skating. *Feb. 29-Mar. 2*, Premier Segni of Italy visited Canada. *Mar. 2*, World figure skating championships opened in Vancouver; Barbara Wagner and Bob Paul, Toronto, were pairs title winners for fourth consecutive year. Extension of Federal Government's sponsorship of tubercular refugees beyond the 100 families already brought to Canada announced by External Affairs Minister Green. *Mar. 8*, Four 1959 winners of the Governor General's awards for literature announced by Canada Council—Hugh MacLennan, English fiction; Irving Layton, English poetry; André Giroux, French fiction; and Rt. Rev. Felix-Antoine Savard, French non-fiction. *Mar. 16*, The UN Ten-Nation Disarmament Committee began negotiations. *Mar. 16-18*, Dr. Horacio Lafer, Brazil's Secretary of State for External Relations, visited Ottawa. *Mar. 28*, Assent given by the Ontario Legislature for the incorporation of a non-denominational bilingual university at Sudbury to be known as Laurentian University. *Apr. 1*, National Energy Board recommendations for export of natural gas to the U.S. approved by the Federal Government. *Apr. 11*, Death of James Muir, Chairman and President of the Royal Bank of Canada. Canadian newspaperman Norman Phillips, released after detention by police following filing of his news story of racial disturbances in South Africa. *Apr. 18*, President de Gaulle of France, accompanied by Mme. de Gaulle, arrived in Ottawa for a four-day state visit to Canada. Canada and the Soviet Union signed a three-year trade agreement under which the U.S.S.R. will spend \$2 in Canada for every Canadian dollar spent in Russia, the U.S.S.R. promising to buy \$25,000,000 worth of goods every year. *Apr. 21*, Prime Minister Diefenbaker and Mrs. Diefenbaker left Ottawa by air for Mexico City as guests of Mexican President and Señora Lopez Mateos. *Apr. 22*, Field Marshall Viscount Montgomery arrived in Ottawa for a four-day visit. *Apr. 27*, The first Canadian Histadrut Humanitarian Award presented to Claude Jodoin President of the Canadian Labour Congress. External Affairs Minister announced a \$15,000,000 Colombo Plan contribution to Pakistan. *Apr. 30*, Hundredth anniversary of the Queen's Own Rifles of Canada. *May 3*, The ninth conference of Commonwealth Prime Ministers opened in London; Canada requested that the Conference consider the possibility of setting up a Colombo Plan for aid to Africa. *May 6*, Her Royal Highness Princess Margaret and Antony Armstrong-Jones married in Westminster Abbey. *May 16*, Big Four Summit Conference opened in Paris. *May 17*, Summit meeting failed as a result of U-2 aircraft incident. *May 27-28*, His Majesty King Mahendra Bikram Shah Deva of Nepal paid an official visit to Ottawa as part of a North American tour. *June 6*, World Trade Conference opened in Toronto with address by Transport Minister Hees. *June 30*, New Ottawa Airport officially opened by Prime Minister Diefenbaker. *July 1*, Belgian Congo becomes a republic, starting a period of unrest and violence over the withdrawal of Belgian military forces and internal leadership. *July 10*, Roger Woodward, 7, survived 167-foot drop over Niagara Falls after boating accident. *July 11*, The Northwest Territories Council convened at Resolute Bay, the most northerly assembly point for any legislative body in the world. *July 12-13*, Meeting at Ottawa of Canada-United States Cabinet Defense

Committee to consider all aspects of North American defence. *July 16*, UN troops arrive in terror-haunted Congo. *July 23*, Her Majesty Queen Elizabeth awarded the Rt. Hon. Vincent Massey, former Canadian Governor General, the Royal Victorian Chain as "a mark of the highest distinction and special favour". *July 25-27*, Federal-Provincial fiscal conference, attended by Premiers of all provinces, set up basis for further discussions on constitutional amendment and tax issues. *Aug. 4*, Bill of Rights approved by House of Commons. Announcement that Her Majesty Queen Elizabeth signed an order formally giving the West Indies Federation full power of home rule beginning Aug. 16. *Aug. 10*, Independent-minded Congo province of Katanga agreed conditionally to admit UN troops. UN Security Council order for immediate replacement of Belgian troops in that area with units from UN forces already in Congo. *Aug. 11*, Establishment of a Medical Research Council similar to the National Research Council and vast expansion of the government's role in medical research approved by the Federal Government. Hazen Argue selected as national leader of the CCF Party. *Aug. 12*, Series of UNESCO conferences on adult education held at Toronto, Montreal, Ste. Agathe and Syracuse, N.Y.; representatives from 60 countries and 20 major international organizations attended. *Aug. 13*, First group of army signallers assigned to UN forces in the Congo left Canada for Leopoldville by air. *Aug. 16*, Cyprus attained independence and became the fourth republic within the Commonwealth. *Aug. 18*, Canadian servicemen manhandled by Congolese troops. Premier Lumumba of Congo apologized for incident Aug. 21. *Aug. 25*, Olympic Games opened in Rome; 72 Canadians to compete. *Aug. 30*, Announcement of a Canadian achievement in the field of Atomic energy—creation at Chalk River of a nuclear molecule. *Aug. 31*, Federal conciliation board recommendation of an hourly increase of 14 cents for a two-year contract accepted by representatives of labour unions bargaining for non-operational railway employees. *Sept. 8*, Agreement reached between Federal Government and authorities of Quebec and Ontario for a bridge spanning the Ottawa River to replace the Interprovincial Bridge between Ottawa and Hull, work to begin shortly. *Sept. 10*, New Halifax International Airport officially opened by Transport Minister Hees. *Sept. 14*, The Second Commonwealth and Empire Law Conference began in Ottawa, with addresses by Justice Minister Fulton and Chief Justice Patrick Kerwin. Former Premier of Quebec, Antonio Barrette, announced his resignation as leader of the Union Nationale party and as member of the Legislature. *Sept. 15*, Maurice (Rocket) Richard, hockey's all-time scoring leader, announced his retirement. *Sept. 16*, A three-man Royal Commission, headed by J. Grant Glasco, Toronto, was appointed to examine all aspects of the Federal Government. *Sept. 18*, National observance of 20th anniversary of the Battle of Britain held on Parliament Hill; a highlight of the ceremony was a performance by the famed Golden Hawks aerobatic team. An emergency session of the United Nations General Assembly began; the Congo issue and the policies of Secretary-General Dag Hammarskjöld were the main issues. *Sept. 19*, University of Alberta, Calgary, opened on a new 320-acre campus on the outskirts of the city; it

is an affiliate of the University of Alberta, Edmonton. *Sept. 20*, The 15th General Assembly of the United Nations opened attended by many heads of state including British Prime Minister Macmillan, Soviet Premier Krushchev, Canadian Prime Minister Diefenbaker, Prime Minister Nehru of India, President Nasser of the United Arab Republic, King Hussein of Jordan, President Tito of Yugoslavia, President Sukarno of Indonesia, Prime Minister Menzies of Australia, Prime Minister Nash of New Zealand, Premier Castro of Cuba. Thirteen new African countries and Cyprus were admitted to UN membership. *Sept. 21*, Canada will contribute \$22,100,000 over a 10-year period to an international fund for the development of the Indus River basin in

Pakistan—the largest irrigation scheme yet undertaken by man. *Sept. 23*, Rt. Hon. Vincent Massey, former Governor General of Canada and Chief Scout, laid a commemorative stone at the new Canadian Scout Headquarters in Ottawa. *Sept. 23*, Prime Minister Diefenbaker, in a powerful speech before the United Nations General Assembly, called on Russia to resume negotiations on disarmament and offered proposals to further world peace. *Sept. 27*, Prime Minister Diefenbaker cheered at Uplands Airport on his return from the United Nations General Assembly. *Sept. 28*, New bridge between Prescott, Ont., and Ogdensburg, N.Y., the "Seaway Skyway", officially opened with Governor Rockefeller of New York and Premier Frost of Ontario officiating.

PART VI.—STATISTICAL SUMMARY OF THE PROGRESS OF CANADA 1871-1959

Newfoundland entered Confederation in 1949 and figures for that province are included with Canadian statistics as they have become available. Under each item in the following Summary the inclusion of Newfoundland data for the first time is indicated by a black dot (•). If no dot is shown on any of the years from 1951-59 for a particular item, Newfoundland is excluded throughout. In some instances the symbol does not apply. Revisions of figures published in previous editions of the Year Book are not indicated in this Summary.

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA

NOTE.—The interpretation of the symbols used in this table will be found facing p. 1 of this volume.

Item		1871	1881	1891	1901	1911	1921
Population—¹							
1	Newfoundland..... No.	...	...	...	...	...	...
2	Prince Edward Island.....	94,021	108,891	109,078	103,259	93,728	88,615
3	Nova Scotia.....	387,800	440,572	450,396	459,574	492,538	523,837
4	New Brunswick.....	285,594	321,233	321,263	331,120	351,889	387,876
5	Quebec.....	1,191,516	1,359,027	1,488,535	1,648,898	2,005,776	2,360,510
6	Ontario.....	1,620,851	1,926,922	2,114,321	2,182,947	2,527,292	2,933,662
7	Manitoba.....	25,228	62,260	152,506	255,211	461,394	610,118
8	Saskatchewan.....	..	..	..	91,279	492,432	757,510
9	Alberta.....	..	..	..	73,022	374,295	588,454
10	British Columbia.....	36,247	49,459	98,173	178,657	392,480	524,582
11	Yukon Territory.....	..	..	..	27,219	8,512	4,157
12	Northwest Territories.....	48,000	56,446	98,967	20,129	6,507	8,143
	Canada..... No.	3,689,257	4,324,810	4,833,239	5,371,315	7,206,643	8,787,949 ²
13	Households (excl. Territories)... No.	..	800,410	900,080	1,058,386	1,482,980	1,897,110
Immigration—							
14	From United Kingdom..... No.	..	17,033	22,042	11,810 ⁴	144,076	43,772
15	From United States.....	..	21,822	52,516	17,987 ⁴	112,028	23,888
16	From other countries.....	..	9,136	7,607	19,352 ⁴	75,184	24,068
	Totals, Immigration..... No.	27,773	47,991	82,165	49,149 ⁴	331,288	91,728
Vital Statistics—							
17	Births (live)..... No.	..	..	..	..	..	264,879 ⁵
	Rates per 1,000 population.....	..	..	..	..	..	29.3 ⁵
18	Deaths, all causes..... No.	..	..	..	..	..	104,531 ⁵
	Rates per 1,000 population.....	..	..	..	..	..	11.6 ⁵
19	Marriages..... No.	..	..	..	..	..	71,254 ⁵
	Rates per 1,000 population.....	..	..	..	..	..	7.9 ⁵
20	Divorces..... No.	4	7	10	19	57	558
Health and Welfare—							
PUBLIC HOSPITALS—⁶							
21	Hospitals..... No.	..	..	..	..	..	..
22	Bed capacity ⁷.....	..	..	..	..	..	..
23	Patient days ⁸.....	..	..	..	..	..	..
24	Expenditure (net) ⁹..... \$	..	..	..	..	..	..
Tuberculosis Sanatoria—							
25	Sanatoria..... No.	..	..	..	..	..	..
26	Bed capacity.....	..	..	..	..	..	..
27	Patient days.....	..	..	..	..	..	..
28	Expenditure (net) ⁹..... \$	..	..	..	..	..	..
Mental Institutions—							
29	Hospitals..... No.	..	..	..	..	..	..
30	Bed capacity.....	..	..	..	..	..	..
31	Patient days.....	..	..	..	..	..	..
32	Expenditure (net) ⁹..... \$	..	..	..	..	..	..
33	FAMILY ALLOWANCES ⁴..... \$	..	..	..	..	..	..
34	OLD AGE SECURITY ⁴..... \$	..	..	..	..	..	..
35	ALLOWANCES FOR THE BLIND ⁴ , 11.. \$	..	..	..	..	..	..
36	UNEMPLOYMENT INSURANCE PAID ⁴ , 12..... \$	..	..	..	..	..	..
Criminal Statistics—¹³							
37	Convictions, indictable offences. No.	..	3,509 ¹⁴	3,974	5,638	12,627	19,396
38	Convictions, offences punishable on summary conviction—						
	Relating to traffic and parking regulations..... No.	..	30,365 ¹⁴	33,643	36,510	100,633	51,843
39	Other.....	..	..	..	..	..	105,934

¹ At every census the previous post-censal estimates made at June 1 each year are adjusted to the newly recorded population figures.² Includes 485 members of the Royal Canadian Navy recorded separately.³ Inter-censal estimate—excludes households in institutions.⁴ Year ended Mar. 31.⁶ Reporting public hospitals only; private and federal hospitals excluded.⁷ Bassinets for

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA—continued

NOTE.—The interpretation of the symbols used in this table will be found facing p. 1 of this volume.

1931	1941	1951	1956	1957	1958	1959	
...	...	361,416	415,074	426,000	438,000	449,000	1
88,038	95,047	98,429	99,285	99,000	100,000	102,000	2
512,846	577,962	642,584	694,717	702,000	710,000	716,000	3
408,219	457,401	515,697	554,616	565,000	577,000	590,000	4
2,874,662	3,331,882	4,055,681	4,628,378	4,758,000	4,884,000	4,999,000	5
3,431,683	3,787,655	4,597,542	5,404,933	5,622,000	5,803,000	5,952,000	6
700,139	729,744	776,541	850,040	860,000	870,000	885,000	7
921,785	895,992	831,728	880,665	879,000	888,000	902,000	8
731,605	796,169	939,501	1,123,116	1,160,000	1,201,000	1,243,000	9
694,263	817,861	1,165,210	1,398,464	1,487,000	1,544,000	1,570,000	10
4,230	4,914	9,096	12,190	12,000	13,000	13,000	11
9,316	12,028	16,004	19,313	19,000	20,000	21,000	12
10,376,786	11,506,655	14,009,429●	16,080,791	16,589,000	17,048,000	17,442,000	
2,275,171	2,706,089	3,420,822●	3,941,148	4,112,000 ^a	4,234,000 ^a	4,366,000 ^a	13
7,678	435	31,559	50,390	108,989	24,777	18,222	14
15,195	6,594	7,755	9,777	11,008	10,846	11,338	15
4,657	2,300	155,077	104,690	162,167	89,228	77,368	16
27,530	9,329	194,391	164,857	282,164	124,851	106,928	
247,205	263,993	381,092	450,739	469,093	470,118	479,275	17
23.2	22.4	27.2	28.0	28.3	27.6	27.5	
108,446	118,797	125,823	131,961	136,579	135,201	139,913	18
10.2	10.1	9.0	8.2	8.2	7.9	8.0	
68,239	124,644	128,408	132,713	133,186	131,525	132,474	19
6.4	10.6	9.2	8.3	8.0	7.7	7.6	
700	2,462	5,270●	6,002	6,688	6,279	6,222 ^a	20
587	610	778	872●	894	922	..	21
43,247	53,305	68,674	86,018●	88,158	93,271	..	22
9,657,517	12,926,043	19,798,448	24,855,330●	25,794,298	27,270,087	..	23
38,309,400	..	196,203,373	347,356,269●	393,400,881	444,160,613	..	24
31	39	59●	56	54	52	50	25
6,044	8,655	13,502●	13,596	13,220	12,031	11,087	26
1,924,289	3,227,640	4,640,217●	4,240,580	3,887,198	3,413,428	3,131,830	27
5,329,393	7,753,229	26,815,147●	32,003,164	32,189,682	30,410,121	..	28
52	54	63●	73	73	78	76	29
29,283	38,800	44,205●	54,951	54,487	57,425	58,054	30
10,662,343	16,078,250	19,708,905●	22,993,091	23,044,510	24,064,492	23,701,823	31
13,285,767	14,725,760	46,403,522●	76,942,032	85,301,953	96,326,928	..	32
7,050,924 ¹⁰	28,472,475 ¹⁰	309,465,461●	382,535,026	397,517,840	437,886,560	474,787,068	33
..	1,067,239	99,268,006 ¹⁰	366,218,474	379,111,374	473,859,103	559,279,858	34
..	..	3,901,109●	2,918,495	2,959,528	3,575,724	4,235,131	35
..	..	88,273,000●	215,206,000	231,296,000	385,076,000	478,631,000	36
31,542	42,646	40,289●	45,913	54,900	62,839	..	37
212,361	369,234	1,065,426●	2,127,737	2,168,181	2,209,746	..	38
115,417	178,322	243,040●	273,993	298,581	299,230	..	39

newborn excluded.

^a Days' stay of newborn excluded.^a Not all hospitals shown above furnished

financial reports.

¹⁰ Provinces contributed prior to 1952 but their contributions are not included.¹¹ Federal

contribution only.

¹² Includes seasonal benefit payments from 1950.¹³ Years ended Sept. 30

prior to 1950; 1950 and subsequently, years ended Dec. 31.

¹⁴ 1886 figures; first year available.

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA—continued

	Item	1871	1881	1891	1901	1911	1921
Education—							
1	Total enrolment, all types.... No.	803,000	891,000	993,000	1,092,633	1,361,205	1,880,805
2	Teachers ² "	13,559	18,016	23,718	27,126	40,516	56,607
3	Expenditure on.....\$'000	..	..	..	11,045	37,971	112,977
Survey of Production—							
4	Net value.....\$'000	..	..	..	..	..	..
Agriculture—							
5	Area of occupied farms....'000 acres	36,046	45,358	58,998	63,422	108,969	140,888
6	Improved lands..... "	17,336	21,899	27,730	30,166	48,734	70,770
7	Cash income from the sale of farm products.....\$'000	..	..	..	..	..	..
FIELD CROPS—⁴							
8	Wheat.....'000 bu.	16,724	32,350	42,145	55,572	132,078	226,508
	".....\$'000	16,993	38,820	31,668	36,122	104,817	374,179
9	Oats.....'000 bu.	42,489	70,493	83,428	151,497	245,393	364,989
	".....\$'000	15,966	23,968	31,703	51,509	86,796	180,990
10	Barley.....'000 bu.	11,496	16,845	17,223	22,224	28,848	42,956
	".....\$'000	8,171	11,791	8,611	8,890	14,654	33,514
11	Corn.....'000 bu.	3,803	9,025	10,711	25,876	14,418	10,822
	".....\$'000	2,283	5,415	5,034	11,903	5,774	7,081
12	Potatoes.....'000 cwt.	28,398	33,221	32,095	33,218	33,277	37,338
	".....\$'000	15,212	13,289	21,396	13,841	27,427	44,636
13	Tame hay.....'000 ton	3,819	5,056	7,694	6,944	10,406	8,830
	".....\$'000	38,870	40,446	69,244	85,625	90,116	174,110
	Totals, Field Crops ⁵....'000 acres			15,663	19,764	30,556	47,553
	".....\$'000	111,117	155,277	194,767	237,682	384,514	933,046
LIVESTOCK AND POULTRY—⁶							
14	Horses.....'000	837	1,059	1,471	1,578	2,599	3,452
	".....\$'000	..	..	..	118,279	381,916	414,808
15	Milk cows.....'000	1,251	1,596	1,857	2,409	2,645	3,087
	".....\$'000	..	..	..	69,238	111,833	188,518
16	Other cattle.....'000	1,373	1,919	2,264	3,168	3,881	5,283
	".....\$'000	..	..	..	54,197	84,021	146,567
17	Sheep.....'000	3,156	3,049	2,564	2,510	2,174	3,201
	".....\$'000	..	..	..	10,491	10,702	20,675
18	Swine.....'000	1,366	1,208	1,734	2,354	3,635	3,324
	".....\$'000	..	..	..	16,446	26,987	35,869
19	All poultry.....'000	..	..	14,105	17,923	31,793	37,186
	".....\$'000	..	..	..	5,724	14,654	38,015
	Totals, Livestock and Poultry.....\$'000	..	..	..	274,375	630,113	844,452
DAIRYING—⁷							
20	Total milk production.....'000 lb.	..	..	..	6,866,834	9,806,741	11,897,545
21	Farm value of total milk production.....\$'000	..	..	..	66,471	103,382	161,829
Forestry—							
22	Primary forest production.....\$'000	..	..	..	..	..	168,054
23	Lumber production.....M ft. b.m.	..	..	..	..	4,918,202	2,869,307
	".....\$'000	..	..	..	..	75,831	82,449
24	Total sawmill products.....\$'000	..	..	..	..	..	116,891
25	Pulp and paper products.....\$'000	..	..	..	..	..	151,003
26	Exports of wood, wood products and paper ⁸.....\$'000	..	..	25,351	33,100	56,335	284,561

¹ Estimated. ² Up to 1941 includes teachers in provincially controlled ordinary and technical day schools only; subsequently all teachers. ³ Includes the Yukon and Northwest Territories. ⁴ Figures for the decennial census years 1871-1921 are for the immediately preceding years; those for 1871 are for the four original

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA—continued

1931	1941	1951	1956	1957	1958	1959	
2,264,106 71,246 144,749	2,131,391 75,308 129,817	2,922,931● 105,796● 524,033●	3,843,300 ¹ 135,350 ¹ 885,771	3,945,299 151,839 960,000 ¹	4,122,427 155,182 1,185,600 ¹	4,529,909 158,075 1,329,000 ¹	1 2 3
..	4,572,505	13,169,417●	17,789,257	17,920,778	18,077,750	..	4
163,114 85,732	173,563 91,636	174,047 ² ● 96,853 ² ●	173,924 ² 100,326 ²	.. ..	.. ..	.. ..	5 6
471,913	880,849	2,782,750	2,641,873	2,573,341	2,813,299	2,786,006	7
312,325 123,550 328,278 77,970 67,383 17,465 5,449 2,274 52,305 22,359 14,540 110,110	314,710 192,642 306,052 125,657 110,401 47,296 13,672 9,868 37,039 46,234 14,448 178,638	553,678 856,785 493,896 374,941 245,435 270,237 15,900 28,500 29,928 101,189 20,190 307,118	573,040 714,053 524,517 300,284 269,095 211,336 27,814 33,377 42,325 74,274 19,655 302,698	385,508 493,491 380,599 226,811 215,953 165,051 29,813 34,950 44,077 76,302 19,185 295,177	371,730 492,198 400,951 252,584 244,764 187,491 29,892 36,155 40,301 69,573 18,029 282,558	413,520 457,111 417,933 233,850 225,550 163,237 31,023 32,115 36,532 83,613 20,246 307,069	8 9 10 11 12 13
58,862 435,966	55,103 678,899	60,835 2,140,631	60,948 1,854,120	60,302 1,456,452	59,356 1,507,008	60,430 1,447,180	
3,114 205,087 3,372 160,655 4,601 94,952 3,627 19,680 4,700 33,288 65,468 45,138	2,789 184,550 3,626 191,214 4,891 138,196 2,840 17,039 6,031 54,912 63,526 27,444	1,304 94,132 2,973 741,356 5,390 852,236 1,461 38,267 4,914 185,395 64,541 84,010	782 74,384 3,160 447,057 7,851 668,119 1,620 25,983 4,731 115,054 73,052 79,729	730 74,657 3,147 452,196 7,149 716,699 1,661 27,653 4,857 153,791 77,168 79,021	675 75,368 3,129 572,927 7,872 882,975 1,713 30,667 6,164 213,261 82,624 90,051	614 75,880 3,108 624,929 8,012 975,418 1,761 28,532 6,872 179,298 81,785 87,725	14 15 16 17 18 19
558,800	613,354	1,995,396	1,410,336	1,504,007	1,865,244	1,971,782	
14,339,686	16,068,037	15,309,971	16,966,242	17,306,028	18,053,883	18,191,963	20
139,769	205,278	465,270	503,821	532,110	571,840	593,128	21
141,124 2,497,553 45,978 62,749 174,734	225,614 4,941,084 129,288 163,412 334,726	821,022● 6,948,697● 507,650● 591,552● 1,237,897●	939,143 7,739,603 539,262 639,414 1,453,442 ²	823,054 7,099,758 466,224 555,688 1,411,934 ²	638,611 7,179,080 459,901 548,299 1,394,679 ²	.. .. .. .. ..	22 23 24 25
185,493	387,113	1,399,076●	1,514,832	1,456,125	1,413,989	1,518,447	26

provinces only.

¹ Includes other field crops, e.g., rye and flaxseed, not specified.² On farms only.³ Figures for the decennial census years 1891-1911 are for the immediately preceding years.⁴ Value of factoryshipments. ⁵ Years ended Mar. 31 prior to 1931.

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA—continued

	Item	1871	1881	1891	1901	1911	1921
Mineral Production—							
1	Gold.....oz. t.	105,187	63,524	45,018	1,167,216	473,159	926,329
	\$	2,174,412	1,313,153	930,614	24,128,503	9,781,077	19,148,920
2	Silver.....oz. t.	..	355,083 ¹	414,523	5,539,192	32,559,044	13,543,198
	\$	..	347,271 ¹	409,549	3,265,354	17,355,272	8,485,355
3	Copper.....lb.	..	3,260,424 ¹	9,529,401	37,827,019	55,648,011	47,620,820
	\$	..	366,799 ¹	1,226,703	6,096,581	6,836,998	5,953,555
4	Lead.....lb.	..	204,800 ¹	88,665	51,900,958	23,784,969	66,679,592
	\$	..	9,216 ¹	3,857	2,249,387	827,717	3,828,742
5	Zinc.....lb.	..	..	..	788,000 ²	1,877,479	53,089,356
	\$	..	..	..	36,011 ²	108,105	2,471,310
6	Nickel.....lb.	..	830,477 ³	4,035,347	9,189,047	34,098,744	19,293,060
	\$	..	498,286 ³	2,421,208	4,594,523	10,229,623	6,752,571
7	Coal.....ton	1,063,742 ⁴	1,537,106	3,577,749	6,486,325	11,323,388	15,057,493
	\$	1,763,423 ⁴	2,688,621	7,019,425	12,699,243	26,467,646	72,451,656
8	Natural gas.....M cu. ft.	..	..	..	..	..	14,077,601
	\$	..	..	150,000 ⁵	339,476	1,917,678	4,594,164
9	Petroleum, crude.....bbl.	..	368,987	755,298	622,392	291,092	187,641
	\$	..	..	1,010,211	1,008,275	357,073	641,533
10	Asbestos.....ton	..	..	9,279	40,217	127,414	92,761
	\$	..	..	999,878	1,259,759	2,943,108	4,906,230
11	Cement ⁶.....bbl.	..	69,843 ¹	93,479	450,394	5,692,915	5,752,885
	\$	..	81,909 ¹	108,561	660,030	7,644,537	14,195,143
	Totals, Mineral Production ⁷.. \$	..	10,221,255 ⁷	18,976,616	65,797,911	103,220,994	171,923,342
Water Power—							
12	Turbine installation.....hp.	..	..	71,219	238,902	1,363,134	2,754,157
Electric Power Statistics—⁸							
13	Power stations.....No.	..	..	80	58	266	510
14	Capital invested.....\$	..	..	4,113,771	11,891,025	110,838,746	484,669,451
15	Power generated.....'000 kwh.	..	..	..	..	..	5,614,132
16	Customers.....No.	..	..	..	..	..	973,212
Fisheries—							
17	Marketed value of all products \$	7,573,199	15,817,162	18,977,874	25,737,153	34,667,872	34,931,935
Furs—							
18	Pelts taken ¹¹.....No.	..	..	..	..	..	2,936,407
	\$	..	..	..	..	..	10,151,594
19	Value of animals on fur farms.. \$	..	..	..	..	..	5,977,545
Manufactures—							
20	Employees.....No.	187,942	254,935	369,595	339,173	515,203	438,555
21	Capital.....\$	77,984,020	165,302,623	353,213,000	446,916,487	1,247,583,609	2,697,858,073
22	Salaries and wages.....\$	40,851,009	59,429,002	100,415,350	113,249,350	241,008,416	497,399,761
23	Values of materials used in... \$	124,907,846	179,918,593	250,759,292	266,527,858	601,509,018	1,365,292,885
Products—							
24	Gross ¹²\$	221,617,773	309,676,068	469,847,886	481,053,375	1,165,975,639	2,488,987,148
25	Net.....\$	96,709,927	129,757,475	219,088,594	214,525,517	564,466,621	1,123,694,263
Index of Industrial Production— (1949=100)							
26	Total industrial production.....	..	..	..	..	..	..
27	Mining.....	..	..	..	..	..	..
28	Manufacturing.....	..	..	..	..	..	..
29	Non-durables.....	..	..	..	..	..	..
30	Durables.....	..	..	..	..	..	..
31	Electric power and gas utilities.....	..	..	..	..	..	..
Construction—							
32	Value of contracts awarded.... \$	..	..	..	..	345,425,000	240,133,300

¹ 1887. ² 1898. ³ 1889.
cludes other items not specified.

⁴ 1874.

⁵ 1892.

⁶ Beginning in 1956, tons.

⁸ Central electric stations prior to 1956.

⁷ In-
⁹ New series beginning

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA—continued

1931	1941	1951	1956	1957	1958	1959	
2,693,892	5,345,179	4,392,751●	4,383,863	4,433,894	4,571,347	4,483,416	1
58,093,396	205,789,392	161,872,873●	151,024,080	148,757,143	155,334,370	150,508,275	
20,562,247	21,754,408	23,125,825●	28,431,847	28,823,298	31,163,470	31,923,969	2
6,141,943	8,323,454	21,865,467●	25,497,681	25,182,915	27,053,007	28,022,860	
292,304,390	643,316,713	539,941,589●	709,720,500	718,218,535	690,227,408	790,538,660	3
24,114,065	64,407,497	149,026,216●	292,958,091	206,897,988	174,430,930	233,102,813	
267,342,482	460,167,005	316,462,751●	377,708,904	362,968,529	373,360,966	373,391,461	4
7,260,183	15,470,815	58,229,146●	58,582,651	50,670,407	42,413,805	39,616,835	
237,245,451	512,381,636	682,224,335●	845,285,125	827,481,656	850,197,572	792,015,223	5
6,059,249	17,477,337	135,762,643●	125,437,344	100,042,533	92,501,496	96,942,663	
65,666,320	282,258,235	275,806,272●	357,030,311	375,916,551	279,117,422	373,110,226	6
15,267,453	68,656,795	151,269,994●	222,204,860	258,977,309	194,142,019	257,008,801	
12,243,211	18,225,921	15,586,823●	14,915,610	13,180,155	11,687,110	10,626,722	7
41,207,682	58,059,630	109,038,835●	95,349,763	90,220,670	79,963,327	73,875,895	
25,874,723	43,495,353	79,460,667●	169,152,586	220,006,682	337,803,726	417,334,527	8
9,026,754	12,665,116	7,158,920●	16,849,556	20,962,501	32,057,536	39,609,393	
1,542,573	10,133,838	47,615,534●	171,981,413	181,848,004	165,496,196	184,778,497	9
4,211,674	14,415,096	116,655,238●	406,561,872	453,593,620	398,747,818	422,092,535	
164,296	977,846	973,198●	1,014,249	1,046,086	925,331	1,050,429	10
4,812,886	21,468,840	81,584,345●	99,859,969	104,489,431	92,276,748	107,033,344	
10,161,658	8,368,711	8,368,711●	5,021,683●	6,049,098	6,153,421	6,284,486	11
15,826,243	13,063,588	40,446,288●	75,233,321	93,167,477	96,414,142	95,147,798	
230,434,726	560,241,290	1,245,483,595●	2,084,905,554	2,190,322,392	2,100,739,038	2,469,020,511	
6,666,337	8,845,038	13,342,504●	18,356,148	19,891,008	22,379,626	24,888,426	12
559	607	647●	..	..	..	..	13
1,229,988,951	1,641,460,451	54,851,844●	88,383,301 ⁹	91,042,080	97,466,822	..	14
16,330,867	33,317,663	3,439,750●	4,427,682 ¹⁰	4,611,178	4,809,634	..	15
1,632,792	2,081,270	..	..	..	..	..	16
30,517,306	62,258,997	204,912,000●	196,577,000	188,018,000	233,660,000	..	17
4,060,356	7,257,337	7,479,272	7,727,264●	6,919,724	6,440,319	5,370,580	18
11,803,217	21,123,161	31,134,400	28,051,746●	25,592,130	26,335,109	25,801,395	19
8,497,237	7,928,971	10,195,561	12,765,000●	..	..	..
528,640	961,178	1,258,375●	1,353,020	1,359,061	1,289,602	..	20
3,705,701,893	4,905,503,966	..	..	..	..	..	21
587,566,990	1,264,862,643	3,276,280,917●	4,570,692,190	4,819,627,999	4,802,496,260	..	22
1,221,911,982	3,296,547,019	9,074,526,353●	11,721,536,889	11,900,751,703	11,821,567,471	..	23
2,555,126,448	6,076,308,124	16,392,187,132●	21,636,748,986	22,183,504,311	22,163,186,308	..	24
1,252,017,248	2,605,119,788	6,940,946,783●	9,605,424,579	9,822,084,726	9,792,505,931	..	25
..	80.1	116.6●	154.9	155.4	153.0	165.4	26
..	101.0	123.4●	212.3	227.8	221.6	251.6	27
..	78.7	115.0●	145.1	142.9	139.1	148.9	28
..	73.7	110.8●	138.1	139.7	139.5	148.8	29
..	85.8	119.9●	153.3	146.7	138.6	149.0	30
..	64.2	129.4●	204.9	220.3	239.1	268.7	31
315,482,000	393,991,300	2,295,499,200●	3,426,905,500	2,894,168,100	3,593,709,200	3,219,073,300	32

in 1956. ¹⁰ Beginning in 1956 only ultimate customers are included.
1952 gross value of products was replaced by value of factory shipments.

¹¹ Years ended June 30.

¹² In

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA—continued

	Item	1871	1881	1891	1901	1911	1921
Transportation—							
RAILWAYS—							
1	Miles in operation..... No.	2,695	7,194	13,838	18,140	25,400	39,191
2	Capital liability..... \$	257,035,188 ¹	284,419,293	632,061,440	816,110,837	1,528,689,201	2,164,687,636
3	Passengers..... No.	5,190,416 ²	6,943,671	13,222,568	18,355,722	37,097,718	46,793,251
4	Freight..... ton	5,670,836 ²	12,065,323	21,753,021	36,999,371	79,884,282	83,730,829
5	Earnings..... \$	19,470,540 ²	27,987,509	48,192,099	72,898,749	188,733,494	458,008,891
6	Expenses..... \$	15,775,532 ²	20,121,418	34,960,449	50,368,726	131,033,785	422,581,205
URBAN TRANSIT SYSTEMS—							
7	Passengers carried..... No.	..	..	..	..	..	..
8	Vehicle-miles run..... " "	..	..	..	..	..	..
9	Gross passenger revenue..... \$	..	..	..	..	..	..
ROAD TRANSPORTATION—							
10	Highways, total milages..... No.	..	..	..	..	..	..
11	Motor vehicles registered..... " "	..	..	..	..	21,783	464,805
SHIPPING—							
12	Vessels on the registry..... No.	..	7,394	7,015	6,697	8,088	7,482
	ton	..	1,310,896	1,005,475	666,276	770,446	1,223,973
International Sea-borne—^{4,5}							
13	Entered..... ton	6,576,771	6,967,449	9,372,369	13,235,307	25,205,441	27,344,957
14	Cleared..... " "	6,549,257	6,834,983	9,430,279	12,794,501	22,224,104	27,303,673
15	Totals..... " "	13,126,028	13,802,432	18,802,648	26,029,808	47,429,545	54,648,630
Coastwise—⁴							
16	Entered..... ton	..	7,664,863	12,835,774	17,927,959	34,280,669	28,567,545
17	Cleared..... " "	..	7,451,903	12,150,356	16,516,837	32,347,265	27,773,668
18	Totals..... " "	..	15,116,766	24,986,130	34,444,796	66,627,934	56,341,213
CANALS—							
19	Passengers carried..... No.	100,377	118,136	146,336	190,428	304,904	230,129
20	Freight..... ton	3,955,621	2,853,230	2,902,526	5,665,259	38,030,353	9,407,021
AIR TRANSPORTATION—⁶							
21	Miles flown (revenue)..... No.	..	..	..	..	..	294,449
22	Passenger miles (revenue)..... " "	..	..	..	..	..	..
23	Freight carried (revenue)..... lb.	..	..	..	..	..	79,850
24	Mail carried..... " "	..	..	..	..	..	..
Communications—							
25	Telegraphs, miles of line..... No.	..	1,947	30,565	35,938	42,351	52,784
26	Telephones..... " "	..	..	..	63,192	302,759 ⁷	902,090
27	Telephones, employees ⁸..... " "	..	..	..	..	10,425 ⁷	19,943
Post Office—							
28	Revenue..... \$	803,637	1,344,970	2,515,824	3,421,192	9,146,952	26,331,119
29	Expenditure..... \$	994,876	1,876,658	3,161,676	3,837,376	7,954,223	24,661,262
30	Money orders issued..... \$	4,546,434	7,725,212	12,478,178	17,956,258	70,614,862	173,523,322
Wholesale and Retail Trade—							
Wholesale—							
31	Establishments..... No.	..	..	..	..	..	..
32	Employees..... " "	..	..	..	..	..	..
33	Net sales ¹⁰..... \$	..	..	..	..	..	..
34	Retail—Stores..... No.	..	..	..	..	..	..
35	Employees, full-time..... " "	..	..	..	..	..	..
36	Net sales..... \$'000	..	..	..	..	..	..
Services—							
37	Establishments..... No.	..	..	..	..	..	..
38	Employees..... " "	..	..	..	..	..	..
39	Receipts..... \$	..	..	..	..	..	..

¹ 1876.² 1875.³ Includes highway transport (rail) operations.⁴ Fiscal years prior to 1941.⁵ Includes sea-going and inland international carriers from 1951.⁷ As at June 30.⁶ Includes Atlantic and Pacific overseas services of Canadian⁹ Excludes rural lines in Saskatchewan.¹⁰ Preliminary; represents approximately 94 p.c. of industry.¹¹ Average minimum.¹² Av.

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA—continued

1931	1941	1951	1956	1957	1958	1959	
42,280	42,441	42,956●	43,652	43,890	44,125	44,209	1
4,232,022,088	3,397,488,564	3,571,693,932●	4,185,193,864	4,330,219,893	4,599,774,523	..	2
26,396,812	29,779,241	30,995,604●	26,070,766	22,965,974	21,376,438	20,939,928	3
74,129,694	116,808,091	161,260,521	189,508,272	174,163,028	153,524,948	..	4
358,549,382	538,291,947	1,088,583,789●	1,398,237,823 ¹⁵	1,365,464,639 ¹⁵	1,269,607,264 ¹⁵	1,337,580,043 ¹⁵	5
321,025,588	403,733,542	977,577,062●	1,264,123,717 ¹⁵	1,302,028,581 ¹⁵	1,232,387,115 ¹⁵	1,272,239,269 ¹⁵	6
..	..	..	1,151,928,811	1,125,608,597	1,079,712,025	1,056,812,775	7
..	..	..	203,888,474	204,031,286	199,480,833	200,085,927	8
..	..	..	129,213,139	133,039,879	133,732,764	140,195,856	9
378,094	561,489	511,878●	453,582	423,939	401,887	..	10
1,200,668	1,572,784	2,872,420●	4,226,474	4,459,595	4,723,825	5,017,686	11
8,966	8,687	15,292●	17,653	18,294	18,797	19,507	12
1,484,423	1,271,811	1,659,351●	1,709,541	1,730,139	1,754,382	1,819,034	13
45,834,452	31,452,400	47,508,342●	63,105,100	66,149,552	57,738,034	..	14
45,077,424	33,313,401	52,750,461●	67,415,232	68,822,187	60,077,872	..	15
90,911,876	64,765,800	100,258,803●	130,520,332	134,971,739	117,815,906	..	16
47,134,652	48,107,158	60,802,798●	75,220,366	76,535,160	76,197,625	..	17
47,540,555	46,433,320	55,609,082●	76,857,713	73,565,370	74,012,136	..	18
94,675,207	94,540,478	116,411,880●	152,078,079	150,100,530	150,209,761	..	19
126,633	100,092	93,512	123,241	98,464	145,562	..	20
16,189,074	23,463,367	29,325,034	40,016,565	37,230,349	35,096,587	..	21
7,046,276	12,508,390	52,578,934●	101,723,710	104,699,140	99,858,279	110,503,312	22
4,073,552	56,723,714	689,819,451●	1,547,279,882	1,835,183,870	2,142,276,186	2,495,457,030	23
2,372,467	16,559,611	59,199,354●	319,260,401	264,812,177	200,388,312	213,030,631	24
470,461	3,411,971	16,824,652●	27,914,288	31,413,504	33,628,013	35,543,446	25
53,228	52,246	53,580●	48,062	48,379	47,495	47,470	26
1,364,200	1,562,146	3,113,766●	4,499,325	4,827,135	5,118,293	5,139,500 ¹⁶	27
23,825	20,103	47,387●	60,121	64,074	61,400	56,856 ¹⁶	28
30,416,107	40,383,366	90,454,678●	137,696,621	145,823,785	152,919,881	157,630,336	29
36,292,604	38,699,674	91,781,466●	127,421,739	139,992,921	153,319,782	157,803,478	30
167,749,651	173,565,550	511,915,621●	725,930,733	799,615,004	845,647,439	853,443,891	31
13,140 ¹⁰	24,758	26,167●	..	..	..	..	32
90,564 ¹⁰	117,471	178,658 ¹¹	..	..	..	..	33
3,325,210,300 ¹⁰	5,290,751,000	14,401,036,700●	7,484,600,000 ¹⁴	7,466,500,000 ¹⁴	7,643,500,000 ¹⁴	8,255,700,000 ¹⁴	34
124,608 ¹⁰	136,990	153,034●	..	..	..	..	35
238,683 ¹⁰	297,047	454,794 ¹²	..	..	..	..	36
2,735,740 ¹⁰	3,414,613	603,891 ¹²	14,297,657 ¹⁴	14,826,441 ¹⁴	15,444,341 ¹⁴	16,148,965 ¹⁴	37
42,223 ¹⁵	49,271	58,748 ¹⁵●	..	..	..	..	38
55,257 ¹⁵	62,781	143,800 ^{15,17}●	..	..	..	..	39
249,455,900 ¹⁵	254,678,000	1,085,757,900●	..	..	..	..	40

erage maximum.

¹² Wholesale proper only for 1956 and subsequent years.¹⁴ Estimated on intercensal

survey.

¹⁵ Census figures for 1930.

64,062 average maximum full-time employees and with receipts of \$348,401,100.

¹⁷ Average minimum.¹⁸ Average.

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA—continued

	Item	1871	1881	1891	1901	1911	1921
1	Bankruptcies and Insolvencies¹ No.	..	..	..	..	..	..
2	Liabilities.....\$'000	..	..	..	..	..	..
	Foreign Trade—^{2,3}						
3	Exports, domestic.....\$'000	57,630	83,945	88,672	177,431	274,317	1,189,164
4	Re-exports.....\$'000	9,853	13,375	8,799	17,078	15,684	21,264
5	Imports, for consumption.....\$'000	84,214	90,488	111,534	177,931	452,725	1,240,159
	Totals, Foreign Trade.....\$'000	151,698	187,808	209,004	372,440	742,725	2,450,587
6	Domestic exports to all Commonwealth.....\$'000	25,346	45,980	47,137	100,748	148,967	403,452
7	Exports to United Kingdom.....\$'000	21,734	42,637	43,244	92,858	132,157	312,845
8	Imports from all Commonwealth.....\$'000	51,317	45,514	44,337	46,653	129,468	266,003
9	Imports from United Kingdom.....\$'000	48,498	42,885	42,019	42,820	109,935	213,974
10	Exports to United States.....\$'000	29,164	34,038	37,743	67,984	104,116	542,323
11	Imports from United States.....\$'000	27,186	36,339	52,033	107,378	275,824	856,177
12	Exports to other countries.....\$'000	3,120	3,026	3,791	8,700	21,233	243,389
13	Imports from other countries.....\$'000	5,712	8,635	15,163	23,900	47,433	117,979
	EXPORTS, DOMESTIC, BY CHIEF ITEMS—						
14	Wheat.....'000 bu.	1,749	2,524	2,108	9,740	45,802	129,215
	\$'000	1,982	2,694	1,583	6,872	45,521	310,952
15	Wheat flour.....'000 bbl.	306	440	297	1,119	3,049	6,017
	\$'000	1,610	2,173	1,389	4,015	13,855	66,520
16	Oats.....'000 bu.	542	2,927	261	8,155	5,432	14,321
	\$'000	231	1,192	130	2,491	2,145	14,132
17	Barley.....'000 bu.	..	8,811	4,892	2,386	1,545	8,564
	\$'000	..	6,261	2,930	1,123	631	11,469
18	Bacon, hams, shoulders and sides.....'000 cwt.	103	104	76	1,055	599	982
	\$'000	1,019	758	628	11,778	8,526	31,492
19	Beef and veal.....'000 cwt.	41	14	3	97	10	520
	\$'000	241	84	16	813	92	8,331
20	Cheese.....'000 lb.	8,271	49,256	106,202	195,926	181,896	133,620
	\$'000	1,110	5,510	9,509	20,667	20,740	37,147
21	Planks and boards.....M ft.	829,550	652,621	775,793	735,695	1,127,723	1,604,463
	\$'000	8,356	7,102	8,627	9,381	21,510	71,079
22	Wood pulp.....'000 cwt.	..	..	..	..	6,589	14,363
	\$'000	..	..	281	1,937	6,716	71,552
23	Newsprint.....'000 cwt.	..	..	..	..	..	15,113
	\$'000	..	..	..	..	3,092	78,922
24	Farm implements.....\$'000	..	31	253	1,743	5,912	12,527
25	Copper.....'000 lb.	6,246	39,604	10,994	26,346	55,005	74,176
	\$'000	120	150	505	2,659	5,575	12,748
26	Nickel.....'000 lb.	..	..	5,352	9,538	34,768	47,018
	\$'000	..	..	240	958	3,842	9,405
27	Lead.....'000 cwt.	4	..	..	..	32	111
	\$'000	..	..	..	2,517	101	526
28	Zinc.....'000 cwt.	..	..	..	..	..	177
	\$'000	..	..	..	..	..	961
29	Asbestos.....'000 ton	..	..	7	27	70	191
	\$'000	..	..	514	865	2,076	12,633
	EXPORTS, DOMESTIC, BY GROUP—						
30	Vegetable products (except chemicals, fibres and wood) \$'000	..	..	13,743	25,542	84,368	482,140
31	Animals and their products (except chemicals and fibres) \$'000	..	..	36,399	68,465	69,693	188,360
32	Fibres, textiles and textile products.....\$'000	..	..	873	1,881	1,819	18,784
33	Wood, wood products and paper.....\$'000	..	..	25,351	33,100	56,335	284,561
34	Iron and its products.....\$'000	..	..	557	3,779	9,884	76,501
35	Non-ferrous metals and their products.....\$'000	..	..	1,619	33,395	34,001	45,939
36	Non-metallic minerals and their products (except chemicals) \$'000	..	..	3,989	7,356	10,038	40,345
37	Chemicals and allied products \$'000	..	..	851	792	3,089	20,143
38	All other commodities.....\$'000	..	..	5,291	3,122	5,089	32,390
	Totals, Exports, Domestic. \$'000	57,630	83,945	88,672	177,431	274,317	1,189,164

¹ Under federal legislation.² Fiscal years prior to 1931.³ Unadjusted for changes in coverage

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA—continued

1931	1941	1951	1956	1957	1958	1959	
..	..	..	1,967 ● 64,254 ●	2,213 79,863	2,125 72,778	2,197 76,800	1 2
587,653 11,907 628,098	1,621,003 19,451 1,448,792	3,914,460 ● 48,924 ● 4,084,856 ●	4,789,746 73,397 5,705,449	4,839,094 95,286 5,623,410	4,823,347 102,942 5,192,351	5,060,710 118,668 5,654,423	3 4 5
1,227,659	3,089,246	8,048,241 ●	10,568,592	10,557,791	10,118,640	10,833,801	
219,781 170,597	878,641 658,228	872,407 ● 631,461 ●	1,055,922 812,706	970,648 737,530	1,056,575 773,804	1,063,578 788,618	6 7
152,000	359,942	727,089 ●	705,911	760,819	736,512	837,455	8
109,468 240,197 393,775 127,675 82,323	219,419 599,713 1,004,498 142,649 84,351	420,985 ● 2,297,675 ● 2,812,927 ● 59,273 ● 53,899 ● 43,906 ● 58,822 ●	484,679 2,818,655 4,161,667 915,169 837,871	521,958 2,867,608 3,998,549 1,000,838 864,042	526,650 2,827,417 3,572,379 939,355 883,460	596,562 3,107,846 3,829,438 889,286 987,531	9 10 11 12 13
194,826 117,871 5,697 20,207 11,177 3,768 24,260 9,924	196,646 161,856 11,439 44,807 7,692 3,295 3,209 1,959	237,061 ● 441,043 ● 12,079 ● 113,854 ● 59,273 ● 53,899 ● 43,906 ● 58,822 ●	302,770 513,081 8,583 71,549 10,112 9,316 81,095 94,977	232,461 380,415 7,610 61,175 29,941 22,390 61,377 67,522	271,796 446,078 8,789 69,398 16,957 13,016 74,623 78,118	263,721 441,830 8,459 64,903 9,015 7,320 62,570 66,310	14 15 16 17 18
128 2,035 37 430 84,788 10,595 937,733 20,116 12,451 30,057 40,165 107,233 2,889 196,789 17,065 63,529 14,182 2,208 4,660 2,391 5,565 159 5,175	4,646 77,494 62 996 92,331 13,555 2,282,139 74,205 28,234 85,898 65,240 154,357 30,972 430,087 40,951 275,190 67,680 3,818 13,525 3,988 12,278 454 19,411	61 ● 3,650 ● 934 ● 50,965 ● 30,653 ● 10,232 ● 3,435,510 ● 312,198 ● 44,866 ● 365,133 ● 102,241 ● 536,372 ● 106,438 ● 304,193 ● 81,691 ● 262,366 ● 136,689 ● 2,536 ● 45,290 ● 6,105 ● 83,689 ● 942 ● 80,333 ●	80 5,663 128 3,644 12,216 4,178 3,936,161 326,445 47,480 304,536 119,344 708,385 67,477 480,729 194,206 353,676 222,909 2,596 35,034 7,770 74,011 964 99,895	47 4,138 474 13,356 8,456 3,079 3,635,497 281,681 45,653 292,406 118,013 715,490 69,676 534,613 162,109 357,315 248,253 2,581 29,396 7,890 64,921 1,031 107,058	56 4,430 537 20,185 15,701 5,002 3,922,953 292,013 44,386 285,449 113,657 690,209 97,594 555,658 135,021 308,440 212,580 2,937 26,099 8,382 55,385 867 90,745	57 4,555 228 9,219 20,010 7,230 4,169,949 322,871 49,001 311,253 118,203 722,271 114,695 546,824 158,827 343,851 226,857 2,980 25,470 7,332 55,097 1,014 110,431	19 20 21 22 23 24 25 26 27 28 29
209,761 70,938 5,394 155,493 19,086 56,159 14,977 10,849 14,995	285,709 201,731 30,820 387,113 239,901 244,012 45,172 58,676 127,869	894,210 ● 348,033 ● 36,855 ● 1,399,076 ● 342,299 ● 569,870 ● 131,529 ● 131,690 ● 60,895 ●	974,964 260,249 22,568 1,514,458 458,849 959,471 292,100 182,854 124,233	831,579 302,051 27,162 1,456,125 518,835 1,006,186 347,705 195,303 154,147	885,339 397,695 20,660 1,413,989 432,433 1,023,607 250,351 197,051 202,221	868,904 355,975 24,997 1,515,962 563,344 1,114,784 294,235 201,729 120,781	30 31 32 33 34 35 36 37 38
587,653	1,621,003	3,914,460 ●	4,789,746	4,839,094	4,823,347	5,060,710	

which will become effective Jan. 1, 1960 and will necessitate eventual revision of back figures for certain items.
 * Less than \$500.

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA—continued

	Item	1871	1881	1891	1901	1911	1921
Foreign Trade—concluded							
IMPORTS FOR CONSUMPTION—							
1	Vegetable products (except chemicals, fibres and wood) \$'000	..	..	24,212	38,036	79,214	259,431
2	Animals and their products (except chemicals and fibres) \$'000	..	..	8,081	14,023	30,672	61,722
3	Fibres, textiles and textile products \$'000	..	..	28,670	37,285	87,916	243,608
4	Wood, wood products and paper \$'000	..	..	5,203	8,197	26,852	57,449
5	Iron and its products \$'000	..	..	15,143	29,956	91,968	245,626
6	Non-ferrous metals and their products \$'000	..	..	3,811	7,167	27,580	55,651
7	Non-metallic minerals and their products (except chemicals) \$'000	..	..	14,139	21,255	53,431	206,095
8	Chemicals and allied products \$'000	..	..	3,698	5,685	12,472	37,887
9	All other commodities \$'000	..	..	8,577	16,327	42,620	72,688
	Totals, Imports \$'000	84,214	90,488	111,534	177,931	452,725	1,240,159
Prices—							
10	General wholesale index (1935-39=100).....	81.3	72.4	67.1	63.7	81.1	143.4
11	Consumer price index (1949=100)...	..	..	..	..	..	80.9
Federal Finance—							
12	Customs duties..... \$	11,841,105	18,406,092	23,305,218	28,203,930	71,838,089	163,266,804
13	Excise duties..... \$	4,295,945	5,343,022	6,914,850	10,318,266	16,809,837	37,118,367
14	Income tax..... \$	...	...	...	...	...	46,381,824
15	Sales tax (net)..... \$	...	...	...	...	...	38,114,539
16	Total receipts from taxation... \$	16,320,369	23,942,139	30,220,068	38,612,196	88,707,926	368,770,498
17	Per capita receipts from taxes.. \$	4.50	5.63	6.32	7.28	12.69	43.10
18	Total revenue..... \$	19,335,561	29,635,298	38,579,311	52,514,701	117,780,409	436,292,185
19	Revenue per capita..... \$	5.34	6.96	8.07	9.91	16.87	50.99
20	Total expenditure..... \$	19,293,478	33,796,643	40,793,208	57,982,866	122,861,250	528,302,513
21	Expenditure per capita..... \$	5.32	7.94	8.54	10.94	17.58	61.75
22	Gross debt..... \$	115,492,683	199,861,537	289,899,230	354,732,433	474,941,487	2,902,482,117
23	Net assets..... \$	37,786,165	44,405,757	52,090,199	86,252,429	134,899,435	561,603,133
24	Net debt..... \$	77,706,518	155,395,780	237,809,031	268,480,004	340,042,052	2,340,878,984
Provincial Finance—							
25	Gross ordinary revenue ¹ \$	5,518,946	7,858,698	10,693,815	14,074,991	40,706,948	102,030,458
26	Gross ordinary expenditure ² \$	4,935,008	8,119,701	11,628,363	14,146,059	38,144,511	102,569,515
27	Net general revenue..... \$	..	..	..	..	..	..
28	Net general expenditure..... \$	..	..	..	..	..	..
Municipal Finance—³							
29	Gross ordinary revenue..... \$	..	..	..	..	..	..
30	Gross ordinary expenditure..... \$	..	..	..	..	..	..
National Accounts—							
31	National income..... \$'000,000	..	..	..	..	..	..
Note Circulation—							
32	Chartered bank notes..... \$	20,914,637	28,516,602	33,061,042	50,601,205	89,982,223	194,621,710
33	Bank of Canada and other notes ⁴ \$	7,244,341	14,539,795	16,176,316	27,898,509	99,308,945	271,531,162
Chartered Banks—							
34	Capital, paid-up..... \$	37,095,340	59,534,977	60,700,697	67,035,615	103,009,256	129,096,339
35	Assets..... \$	125,273,631	200,613,879	269,307,032	531,829,324	1,303,131,260	2,841,782,079
36	Liabilities to the public..... \$	80,250,974	127,176,249	187,332,325	420,003,743	1,097,661,393	2,556,454,190
37	Deposits payable on demand..... \$	..	..	..	95,169,631	304,801,755	551,914,643
38	Deposits payable after notice..... \$	..	..	..	221,624,664	568,976,209	1,289,347,063
39	Totals, deposits ^{5, 11} \$	56,287,391	94,346,481	148,396,968	349,573,327	980,438,788	2,264,586,736
40	Cheque payments..... \$'000	..	..	..	..	..	27,157,474 ¹²
Savings Banks—							
41	Deposits in Post Office..... \$	2,497,260	6,208,227	21,738,648	39,950,813	43,330,579	29,010,619
42	Deposits in Government banks \$	2,072,037	9,628,445	17,661,378	16,098,146	14,673,752	10,150,189
43	Deposits in special banks..... \$	5,766,712	7,685,888	10,982,232	19,125,097	34,770,386	58,576,775

¹ Old Age Security taxes and pensions which commenced on Jan. 1, 1952, not included for 1956 and subsequent years. ² Figures for 1956 and subsequent years are not comparable with previous years as they exclude refunds applicable to other excise duties.

³ Gross ordinary totals are no longer published. Net general revenue and expenditure are available for 1947 and thereafter. ⁴ Includes Yukon Territory in this and subsequent years. ⁵ Includes the Northwest Territories in this and subsequent years. ⁶ Fiscal years

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA—continued

1931	1941	1951	1956	1957	1958	1959	
134,433	171,835	542,641●	628,777	652,225	652,686	684,026	1
28,630	34,846	125,562●	122,154	124,617	128,934	146,635	2
90,152	161,139	483,520●	416,390	408,651	387,357	420,152	3
34,923	36,739	137,047●	228,208	225,888	235,608	272,274	4
116,209	431,622	1,332,251●	2,231,354	2,131,030	1,852,174	2,092,093	5
38,667	94,758	290,848●	491,539	484,863	432,178	471,253	6
106,088	189,954	684,535●	765,971	777,661	682,854	705,606	7
31,337	65,382	191,813●	288,587	293,821	290,358	326,987	8
47,659	262,516	296,638●	532,469	524,656	530,204	535,397	9
628,098	1,448,792	4,084,856●	5,705,449	5,623,410	5,192,351	5,654,423	
94.0	116.4	240.2	225.6	227.4	227.8	230.6	10
67.9	69.6	113.7	118.1	121.9	125.1	126.5	11
131,208,955	130,757,011	295,721,750●	481,239,668	549,074,860	498,068,539	486,508,581	12
57,746,808	88,607,559	241,046,174●	249,383,313	271,443,661	300,132,512	316,744,269	13
71,048,022	248,143,022	1,513,135,510●	2,279,503,232	2,745,199,494	2,798,929,195	2,435,262,769	14
20,783,944	179,701,224	460,120,405●	641,510,469 ¹	717,080,563	703,169,768	694,490,787	15
296,276,396	778,175,450	2,785,349,899●	3,995,721,170	4,647,931,771	4,622,827,382	4,247,378,526	16
29.02	68.37	203.13●	256.12	289.03	278.67	249.14	17
356,160,876	872,169,645	3,112,538,948●	4,400,046,639	5,106,540,880	5,048,788,279	4,754,722,689	18
35.04	76.63	226.99●	282.04	317.55	304.35	278.90	19
440,008,835	1,249,601,446	2,901,241,695●	4,433,127,636 ¹	4,849,035,298	5,087,411,011	5,364,039,533	20
43.26	109.80	211.58●	284.16	301.54	306.67	314.64	21
2,610,265,699	5,018,928,037	16,923,307,028●	19,124,232,779	18,326,190,715	18,418,541,848	20,249,931,793	22
348,653,762	1,370,236,588	5,489,992,080●	7,843,863,815	7,318,539,557	7,372,267,958	8,571,541,933	23
2,261,611,937	3,648,691,449	11,433,314,948●	11,280,368,964	11,007,651,158	11,046,273,890	11,678,389,860	24
179,143,480	404,791,000 ²	1,139,026,000●	1,771,239,000 ³	1,966,714,000	..	..	25
190,754,202	349,818,000 ²	1,040,871,000●	1,588,396,000 ³	1,779,033,000	..	..	26
..	..	952,453,000	1,614,088,000	1,792,557,000	2,025,573,000	2,178,869,000	27
..	..	942,304,000	1,575,265,000	1,773,818,000	2,036,987,000	2,229,174,000	28
..	..	758,237,000●	1,244,823,000	1,404,037,000 ⁷	1,552,087,000 ⁷	1,632,227,000 ⁷	29
..	..	748,039,000●	1,244,964,000	1,395,693,000 ⁷	1,546,755,000 ⁷	1,635,411,000 ⁷	30
3,382	6,305	16,588●	23,166	23,860	24,702	26,281	31
128,881,241	78,761,049	■	■	■	■	■	32
153,079,362	406,433,409	1,360,679,422	1,868,703,781	1,908,721,000	1,998,046,000	2,020,525,000	33
144,674,853	145,500,000	146,502,115●	195,348,000 ¹⁰	211,879,000	225,609,000	254,115,000	34
3,066,018,472	4,008,331,256	9,584,800,263●	13,427,896,000 ¹⁰	14,243,504,000	15,840,274,000	15,834,924,000	35
2,741,554,219	3,711,870,680	9,019,780,755●	12,780,895,000 ¹⁰	13,520,067,000	15,034,123,000	14,919,431,000	36
578,604,394	1,088,198,370	2,711,524,845●	4,180,355,000 ¹⁰	4,095,483,000	4,635,915,000	4,144,353,000	37
1,437,976,832	1,616,129,007	4,592,929,318●	6,451,347,000 ¹⁰	6,655,435,000	7,462,083,000	7,457,181,000	38
2,422,834,828	3,464,781,844	8,464,510,837●	12,531,329,000 ¹⁰	13,234,001,000	14,766,738,000	14,660,919,000	39
31,586,468	39,242,957	112,184,633●	192,289,896	205,558,447	221,289,954	248,869,352	40
24,750,227	22,176,633	37,661,921●	36,164,460	35,918,499	34,895,729	34,155,617 ⁴	41
69,820,422	76,391,775	193,982,871	256,526,482	255,000,311	268,585,424	279,626,478 ⁴	42

ended Dec. 31. ⁷ Includes Yukon and Northwest Territories.liability for such of their notes as then remained outstanding was transferred to the Bank of Canada. ⁸ In January 1950, the chartered banks, ⁹ Asat June 30 from 1871 to 1901. Annual averages of month-end figures from 1911 to 1951. As at Dec. 31 for 1956 and subsequent years. ¹⁰ Figures for 1956 and subsequent years not strictly comparable with previous years.¹¹ Includes deposits of federal and provincial governments and also deposits elsewhere than in Canada from 1901.

12 1924.

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA—concluded

	Item	1871	1881	1891	1901	1911	1921
Loan Companies (Federal)—							
1	Assets..... \$	8,392,464	73,906,638	125,041,146	158,523,307	389,701,988	96,698,810
2	Liabilities..... \$	8,392,958	71,965,017	123,915,704	158,523,307	389,701,988	95,281,122
Loan Companies (Provincial)—							
3	Assets..... \$	..	..	..	..	..	86,144,153 ¹
4	Liabilities..... \$	..	..	..	..	..	87,385,807 ¹
Licensees under the Small Loans Act—							
SMALL LOANS COMPANIES—							
5	Assets..... \$	..	..	..	..	..	..
6	Liabilities..... \$	..	..	..	..	..	..
MONEY-LENDERS—							
7	Assets..... \$	..	..	..	..	..	..
8	Liabilities..... \$	..	..	..	..	..	..
Trust Companies (Federal)—							
ASSETS—							
9	Company funds..... \$	..	..	..	..	..	10,237,930
10	Guaranteed funds..... \$	..	..	..	..	..	8,774,185
LIABILITIES—							
11	Company funds..... \$	..	..	..	..	..	9,907,331
12	Guaranteed funds..... \$	..	..	..	..	..	8,549,642
13	ESTATES, TRUST AND AGENCY FUNDS..... \$	..	..	..	..	..	79,252,639
Trust Companies (Provincial)—⁴							
ASSETS—							
14	Company funds (par value).... \$	..	..	..	..	..	31,418,403
15	Guaranteed funds (par value).. \$	..	..	..	..	..	32,885,302
16	ESTATES, TRUST AND AGENCY FUNDS..... \$	..	..	..	..	..	629,953,917
Federal Fire Insurance—⁵							
17	Amounts at risk, Dec. 31..... \$	228,453,784	462,210,968	759,602,191	1,038,687,619	2,279,868,346	6,020,513,832
18	Premium income for each year. \$	2,321,716	3,827,116	6,168,716	9,650,348	20,575,255	47,312,564
19	Claims paid during each year. \$	1,549,199	3,169,824	3,905,697	6,774,956	10,936,948	27,572,560
Provincial Fire Insurance—							
20	Amounts at risk, Dec. 31..... \$	..	..	..	..	..	1,269,764,435
21	Premium income for each year. \$	..	..	..	..	..	5,545,549
22	Claims paid during each year. \$	..	..	..	..	..	3,544,820
Federal Life Insurance—⁵							
23	Amounts in force, Dec. 31..... \$	45,825,935	103,290,932	261,475,229	463,769,034	950,220,771	2,934,843,848
24	Premium income for each year. \$	1,852,974	3,094,689	8,417,702	15,189,854	31,619,626	98,864,371
25	Claims paid during each year.. \$	..	..	..	6,845,941	11,051,679	23,997,262
Provincial Life Insurance—							
26	Amounts in force, Dec. 31..... \$	..	..	..	..	..	222,871,178
27	Premium income for each year. \$	..	..	..	..	..	4,389,008
28	Claims paid during each year. \$	..	..	..	..	..	2,812,077

¹ 1922. ² Includes money-lenders. ³ Included with small loans companies. ⁴ Compiled from data supplied voluntarily to the Superintendent of Insurance by provincial companies and estimated to cover

STATISTICAL SUMMARY OF THE PROGRESS OF CANADA—concluded

1931	1941	1951	1956	1957	1958	1959	
147,094,183 146,046,087	130,795,391 130,787,116	203,103,850 165,768,886	296,715,805 258,245,799	320,144,380 280,238,094	358,735,601 314,971,124	.. ..	1 2
65,728,238 66,387,987	58,220,073 58,220,073	88,991,635 63,699,805	140,453,366 105,577,295	228,927,416 160,429,357	246,637,900 178,348,969	.. ..	3 4
827,373 823,120	7,918,926 7,918,926	73,980,068 73,980,068	262,386,415 ² 262,386,415 ²	326,549,959 ² 326,549,959 ²	408,581,861 ² 408,581,861 ²	.. ..	5 6
.. ..	11,351,467 11,351,467	30,570,466 30,570,466	3 3	3 3	3 3	.. ..	7 8
15,459,347 25,718,219	20,596,781 38,570,855	28,446,331 93,565,917	36,690,878 170,844,746	38,843,072 176,964,312	36,551,294 238,743,359	.. ..	9 10
15,066,431 25,718,221	20,096,776 38,570,855	26,658,321 93,565,917	36,381,834 170,844,746	38,583,249 176,964,312	36,551,294 238,743,359	.. ..	11 12
215,698,469	268,596,524	543,983,754	815,367,349	886,560,559	990,078,160	..	13
66,338,148 125,829,165	58,165,471 108,912,208	74,399,404 258,413,136	91,554,381 446,445,674	97,258,395 472,678,645	106,914,805 588,188,712	.. ..	14 15
1,961,948,175	2,418,950,841	3,282,558,573	4,318,560,879	4,695,817,867	5,328,920,074	..	16
9,544,641,293 50,342,669 29,938,409	11,386,819,286 49,305,539 17,814,322	33,490,653,184● 134,496,218● 52,086,541●	155,506,787 86,088,850	156,246,117 109,757,161	177,364,450 89,151,837	.. .. ..	17 18 19
1,341,184,333 7,185,066 4,985,605	1,120,181,968 3,992,765 2,237,832	2,887,564,984● 11,614,247● 6,174,914●	16,068,792 9,790,661	19,779,452 12,402,752	23,977,899 13,320,365	.. .. ..	20 21 22
6,622,267,793 225,100,571 56,579,358	7,348,550,742 203,459,238 75,082,008	17,235,583,302● 394,019,379● 128,489,084●	29,087,416,143 564,723,434 180,852,023	33,087,056,501 607,110,740 200,669,872	36,495,778,685 648,513,585 211,917,773	.. .. ..	23 24 25
202,094,301 5,178,615 2,603,453	164,451,218 3,988,952 2,583,958	708,733,573● 16,806,502● 6,727,241●	1,779,673,222 33,082,660 10,369,482 ²	2,106,173,517 38,466,850 12,577,321	2,355,328,564 41,080,135 13,614,911	.. .. ..	26 27 28

about 90 p.c. of all provincial business. The figures include all the large and most of the small provincial companies.
 * Excludes fraternal insurance. ² Includes annuity contracts for 1956 and subsequent years.

APPENDIX

Certain information given in Chapter II on Constitution and Government is brought up to the date of going to press (Oct. 15, 1960) in this Appendix.

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Cabinet changes were announced by the Prime Minister on Oct. 11, 1960; the Ministry on Oct. 15 was as follows:—

Members of the Eighteenth Ministry, as at Oct. 15, 1960

(According to precedence of Ministers)

Prime Minister.....	Rt. Hon. JOHN GEORGE DIEFENBAKER
Secretary of State for External Affairs.....	Hon. HOWARD CHARLES GREEN
Minister of Finance and Receiver General.....	Hon. DONALD METHUEN FLEMING
Minister of Trade and Commerce.....	Hon. GEORGE HEES
Minister of Transport.....	Hon. LÉON BALCEB
Minister of Veterans Affairs.....	Hon. GORDON CHURCHILL
Minister of Justice and Attorney-General.....	Hon. EDMUND DAVIE FULTON
Minister of National Revenue.....	Hon. GEORGE CLYDE NOWLAN
Minister of National Defence.....	Hon. DOUGLAS SCOTT HARKNESS
Minister of Citizenship and Immigration.....	Hon. ELLEN LOUKS FAIRCLOUGH
Minister of Fisheries.....	Hon. J. ANGUS MACLEAN
Minister of Labour.....	Hon. MICHAEL STARR
Postmaster General.....	Hon. WILLIAM MCLEAN HAMILTON
Solicitor General.....	Hon. WILLIAM J. BROWNE
Minister of Mines and Technical Surveys.....	Hon. PAUL COMTOIS
Minister of National Health and Welfare.....	Hon. JAY WALDO MONTEITH
Minister of Agriculture.....	Hon. FRANCIS ALVIN GEORGE HAMILTON
Minister of Defence Production.....	Hon. RAYMOND JOSEPH MICHAEL O'HURLEY
Minister of Public Works.....	Hon. DAVID JAMES WALKER
Associate Minister of National Defence.....	Hon. JOSEPH PIERRE ALBERT SÉVIGNY
Minister of Forestry.....	Hon. HUGH JOHN FLEMMING
Secretary of State.....	Hon. NOËL DORION
Minister of Northern Affairs and National Resources.....	Hon. WALTER DINSDALE
Minister without Portfolio.....	Hon. GEORGE ERNEST HALPENNY

Page 87, Table 5

Warner J. Jorgenson named second Parliamentary Secretary to the Minister of Agriculture, Oct. 11, 1960.

Page 91, Table 9

For appointments to the Senate from Jan. 31, 1960 to Oct. 15, 1960, see p. 1244.

Page 103, Provincial Governments

With reference to the footnote on page 103, elections were held in five provinces and in the Northwest Territories between Jan. 31, 1960 and the date of going to press (Oct. 15, 1960). The Ministries of these provinces and the elected Members of the Council of the Northwest Territories as at Oct. 15 were as follows:—

Seventeenth Ministry—Nova Scotia

(Party standing at latest General Election, Sept. 30, 1960: 27 Progressive Conservative, 15 Liberal and 1 Co-operative Commonwealth Federation)

Premier, Provincial Treasurer and Minister of Education.....	Hon. ROBERT L. STANFIELD
Provincial Secretary, Minister of Highways and Chairman of the Nova Scotia Power Commission.....	Hon. GEORGE I. SMITH
Attorney General and Minister of Public Health.....	Hon. RICHARD A. DONAHOE
Minister of Public Works and Minister of Labour.....	Hon. STEPHEN T. PYKE
Minister of Agriculture and Marketing, Minister in charge of Liquor Control Act and Minister of Lands and Forests.....	Hon. EDWARD D. HALIBURTON
Minister of Mines and Minister of Trade and Industry.....	Hon. EDWARD A. MANSON
Minister of Municipal Affairs and Minister in Charge of Civil Defence.....	Hon. N. LAYTON FERGUSON
Minister of Public Welfare.....	Hon. W. S. KENNEDY JONES

Twenty-Third Ministry—New Brunswick

(Party Standing at latest General Election, June 27, 1960: 31 Liberal and 21 Progressive Conservative)

Premier and Attorney General.....	Hon. LOUIS J. ROBICHAUD
Provincial Secretary-Treasurer.....	Hon. L. G. DESBRISAY
Minister of Lands and Mines.....	Hon. H. G. CROCKER
Minister of Education.....	Hon. HENRY G. IRWIN
Minister of Public Works.....	Hon. ANDREW F. RICHARD
Minister of Agriculture.....	Hon. J. ADRIEN LEVESQUE
Minister of Health and Social Services.....	Hon. GEORGE L. DUMONT
Minister of Labour.....	Hon. KENNETH J. WEBBER
Minister of Municipal Affairs.....	Hon. JOSEPH E. LeBLANC
Chairman, New Brunswick Electric Power Commission.....	Hon. DONALD HARPER
Minister without Portfolio.....	Hon. WILLIAM R. DUFFIE
Minister of Industry and Development.....	Hon. MICHEL FOURNIER

Upon the death on Jan. 2, 1960 of the Hon. Jean-Paul Sauvé, who took office as the Premier of Quebec on Sept. 11, 1959 after the death of the Hon. Maurice Duplessis, the following Cabinet was appointed:—

Twenty-Second Ministry—Quebec

Premier and Minister of Labour.....	Hon. ANTONIO BARRETTE
Minister of Finance.....	Hon. JOHN-S. BOURQUE
Minister of Colonization.....	Hon. Jos.-D. BÉGIN
Minister of Agriculture.....	Hon. LAURENT BARRÉ
Minister of Roads.....	Hon. ANTONIO TABOT
Minister of Fisheries and Game.....	Hon. CAMILLE-E. POULIOT
Minister of Public Works.....	Hon. ROMÉO LORRAIN
Minister of Trade and Commerce.....	Hon. PAUL BRAULIEU
Attorney General and Minister of Transportation and Communications.....	Hon. ANTOINE RIVARD
Provincial Secretary.....	Hon. YVES PRÉVOST
Minister of Mines.....	Hon. W. M. COTTINGHAM
Minister of Municipal Affairs.....	Hon. PAUL DOZOIS
Minister of Health.....	Hon. ARTHUR LECLERC
Minister of Lands and Forests.....	Hon. JACQUES MIQUELON
Minister of Hydraulic Resources.....	Hon. DANIEL JOHNSON
Minister of Social Welfare and Minister of Youth.....	Hon. JEAN-JACQUES BERTRAND

Twenty-Third Ministry—Quebec

(Party standing at latest General Election, June 22, 1960: 51 Liberal, 43 Union Nationale and 1 Independent)

Premier and Minister of Finance.....	Hon. JEAN LESAGE
Attorney General.....	Hon. GEORGES LAPALME
Minister of Labour and Minister of Municipal Affairs.....	Hon. RENÉ HAMEL
Minister of Youth.....	Hon. PAUL GÉRIN-LAJOIE
Minister of Agriculture and Minister of Colonization.....	Hon. ALCIDE COURCY
Minister of Public Works and Minister of Hydraulic Resources.....	Hon. RENÉ LÉVESQUE
Minister of Mines.....	Hon. PAUL EARL
Minister of Transportation and Communications.....	Hon. GÉRARD COUNOYER
Minister of Roads.....	Hon. BERNARD PINARD
Minister of Social Welfare.....	Hon. EMILIE LAPRANCE
Provincial Secretary.....	Hon. LIONEL BERTRAND
Minister of Health.....	Hon. ALPHONSE COUTURIER
Minister of Fisheries and Game.....	Hon. GÉRARD D. LÉVESQUE
Minister of Trade and Commerce.....	Hon. ANDRÉ ROUSSEAU
Minister of Lands and Forests.....	Hon. BONA ARSENAULT
Minister without Portfolio.....	Hon. C. A. KIRKLAND

Eighth Ministry—Saskatchewan

(Party standing at latest General Election, June 8, 1960: 38 Co-operative Commonwealth Federation and 17 Liberal)

Premier and President of the Council.....	Hon. T. C. DOUGLAS
Provincial Treasurer.....	Hon. W. S. LLOYD
Minister of Mineral Resources.....	Hon. J. H. BROCKELBANK
Minister of Municipal Affairs.....	Hon. L. F. McINTOSH
Minister of Labour and Minister of Telephones.....	Hon. C. C. WILLIAMS
Minister of Agriculture.....	Hon. I. C. NOLLET
Minister of Natural Resources.....	Hon. A. G. KUZIAK

Eighth Ministry—Saskatchewan—concluded

Attorney General and Provincial Secretary.....	Hon. R. A. WALKER
Minister of Industry and Information.....	Hon. R. BROWN
Minister of Public Health.....	Hon. J. W. ERB
Minister of Highways and Transportation.....	Hon. C. G. WILLIS
Minister of Social Welfare and Rehabilitation.....	Hon. A. M. NICHOLSON
Minister of Co-operation and Co-operative Development.....	Hon. O. A. TURNBULL
Minister of Education.....	Hon. A. E. BLAKENY
Minister of Public Works.....	Hon. W. G. DAVIES

The appointment of the Hon. George Randolph Pearkes, former federal Minister of National Defence, as Lieutenant-Governor of British Columbia was announced by the Prime Minister on Oct. 11, 1960.

Twenty-Fifth Ministry—British Columbia

(Party standing at latest General Election, Sept. 12, 1960: 32 Social Credit, 16 Co-operative Commonwealth Federation and 4 Liberal)

Premier, President of the Council and Minister of Finance....	Hon. WILLIAM ANDREW CECIL BENNETT
Provincial Secretary, Minister of Municipal Affairs and Minister of Social Welfare.....	Hon. WESLEY DREWETT BLACK
Attorney-General and Minister of Industrial Development, Trade, and Commerce.....	Hon. ROBERT WILLIAM BONNER
Minister of Lands and Forests.....	Hon. RAY GILLIS WILLISTON
Minister of Agriculture.....	Hon. NEWTON PHILLIPS STEACY
Minister of Mines and Petroleum Resources.....	Hon. WILLIAM KENNETH KIERNAN
Minister of Highways.....	Hon. PHILIP ARTHUR GAGLARDI
Minister of Labour and Minister of Commercial Transport.....	Hon. LYLE WICKS
Minister of Education.....	Hon. LESLIE RAYMOND PETERSON
Minister of Health Services and Hospital Insurance.....	Hon. ERIC CHARLES FITZGERALD MARTIN
Minister of Public Works.....	Hon. WILLIAM NEELANDS CHANT
Minister of Recreation and Conservation.....	Hon. EARLE CATHERS WESTWOOD

Council of the Northwest Territories

Elected, Sept. 21, 1960: K. LANG, A. P. CAREY, J. W. GOODALL (acclamation), E. J. GALL (acclamation).

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<i>Nature of Commission</i>	<i>Chief Commissioner</i>	<i>Date of Establishment</i>
Motor Vehicles Industry.....	VINCENT W. BLADEN..	Aug. 2, 1960
Government Organization.....	J. GRANT GLASSCO....	Sept. 16, 1960
Canadian Magazines and other Periodicals.....	M. GRATTAN O'LEARY	Sept. 16, 1960

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